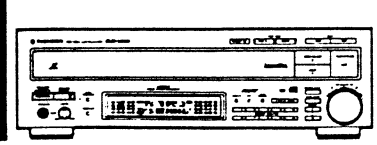
PIONEER®
The Art of Entertainment

Service Manual



ORDER NO.
ARP2335

CD CDV LD PLAYER

CLD-2600

CLD - 2600 HAS THE FOLLOWING :

Type	Power requirement	Remarks
WEZ	AC 220 - 240V	
WB	AC 220 - 240V	

- **This manual is applicable to the WEZ and WB types.**
- **As to the WB type, refer to page 148.**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

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1. SAFETY INFORMATION

(FOR EUR[illegible]EAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSATEILYLLE. ÄLÄ KATSO SATEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersateilyn varoitusmerkki

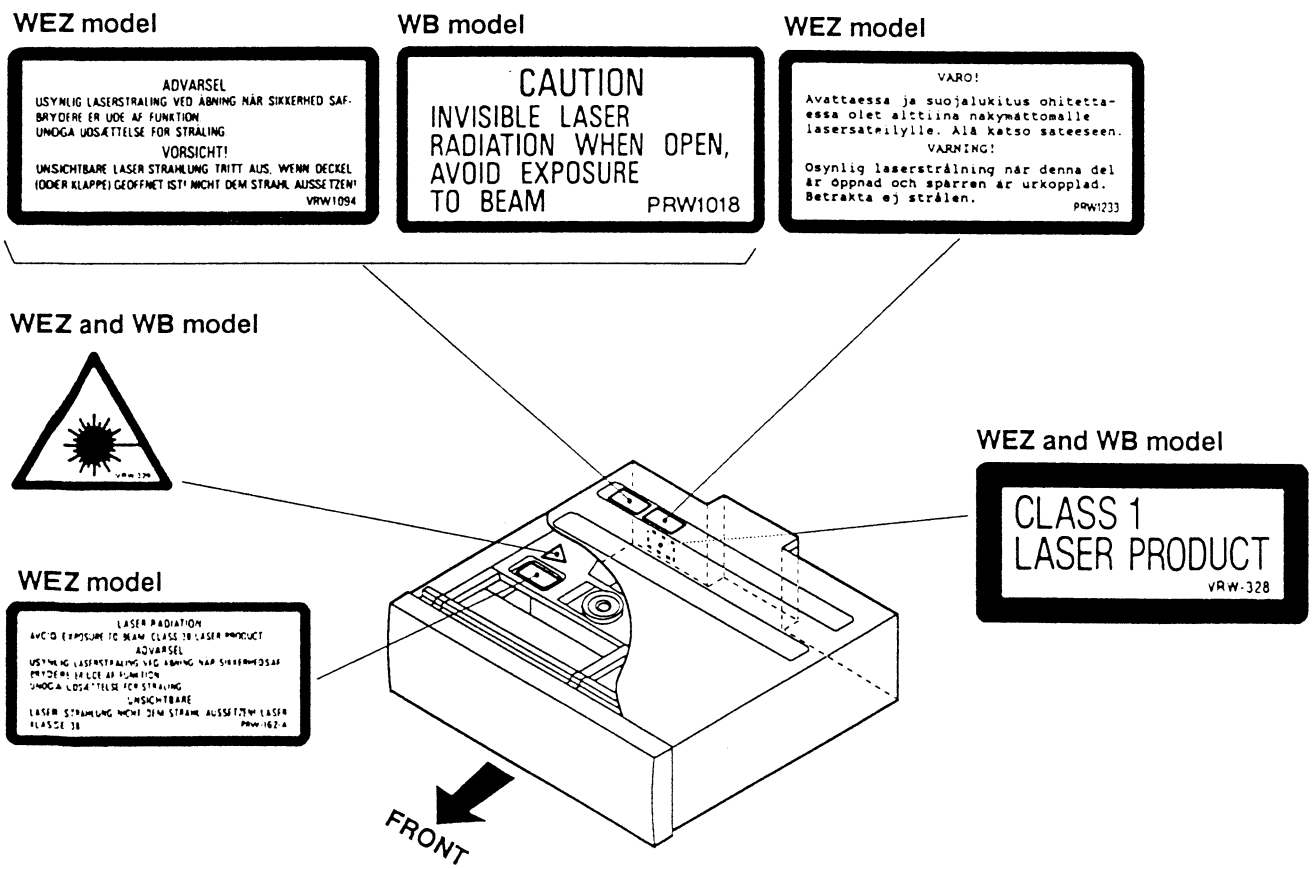
WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF HIGHER CLASS THAN 1. SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

LASER
Picture 1
Warning sign for laser radiation

LABEL CHECK



2. EXPLODED VIEWS, PACKING AND PARTS LIST

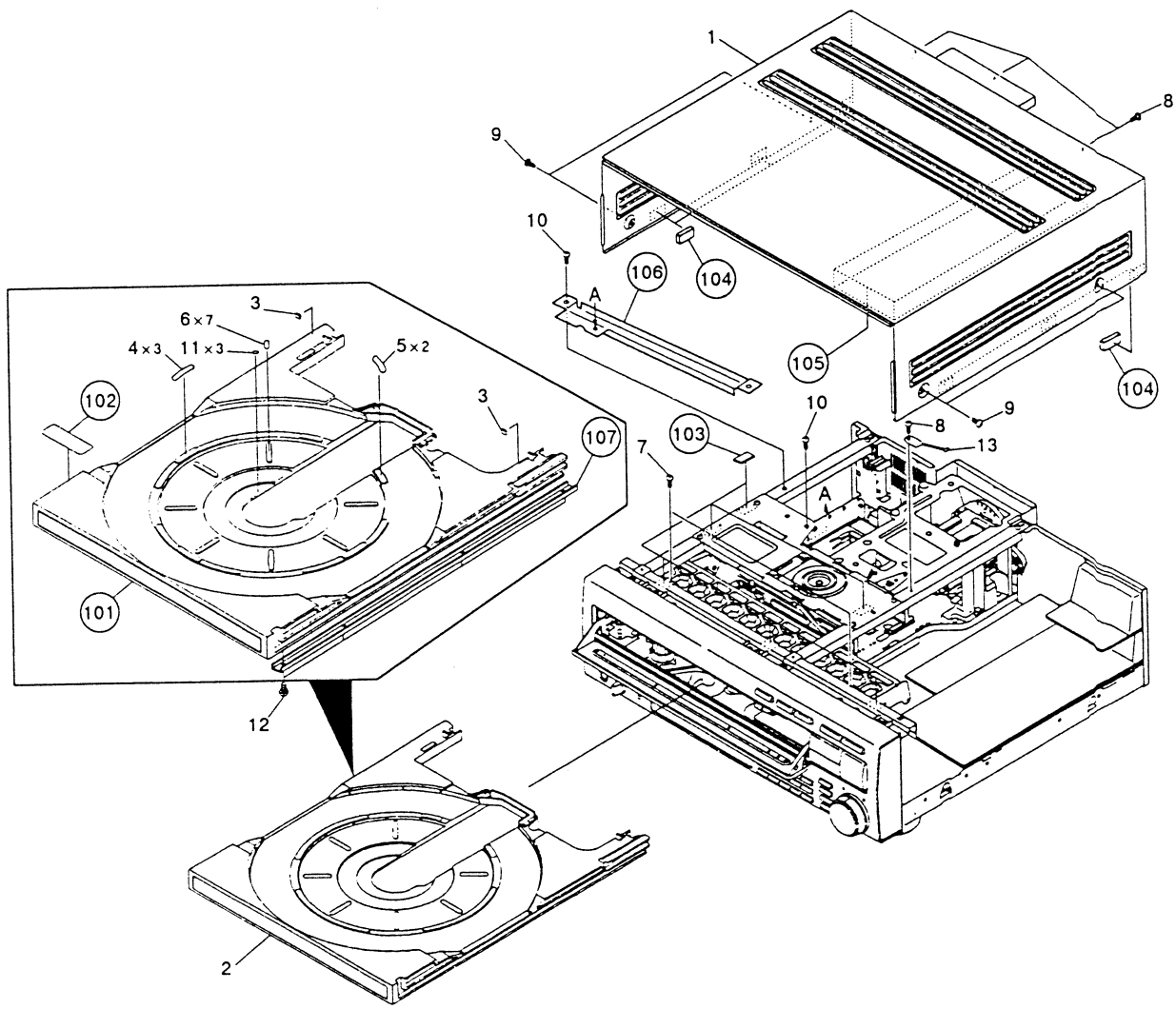
NOTES:

- *The Parts with an encircled number are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

2.1 EXTERIOR SECTION

Parts List

Mark	No.	Description	Part No.
	1	Bonnet-S	VXX1535
	2	Tray assembly-S	VXX1534
	3	Tray rubber	VEB1089
	4	Disc pad (L)	VEC1191
	5	Disc pad (B)	VEC1379
	6	Disc pad (C)	VEC1380
	7	Screw	VCZ30P120FMC
	8	Screw	BBT30P060FCC
	9	Screw	BCZ40P060FZK
	10	Screw	BBZ30P060FCC
	11	CD pad	VEC1252
	12	Screw	BPZ30P080FCU
	13	Tray plate	VBK1029
	101	Tray	VNK1672
	102	Carry label	VRW1058
	103	Cushion	VEC1092
	104	Cushion	VEC1004
	105	Cushion	VEC1104
	106	Reinforced plate angle	VNE1673
	107	Tray reinforced plate	VNE1679



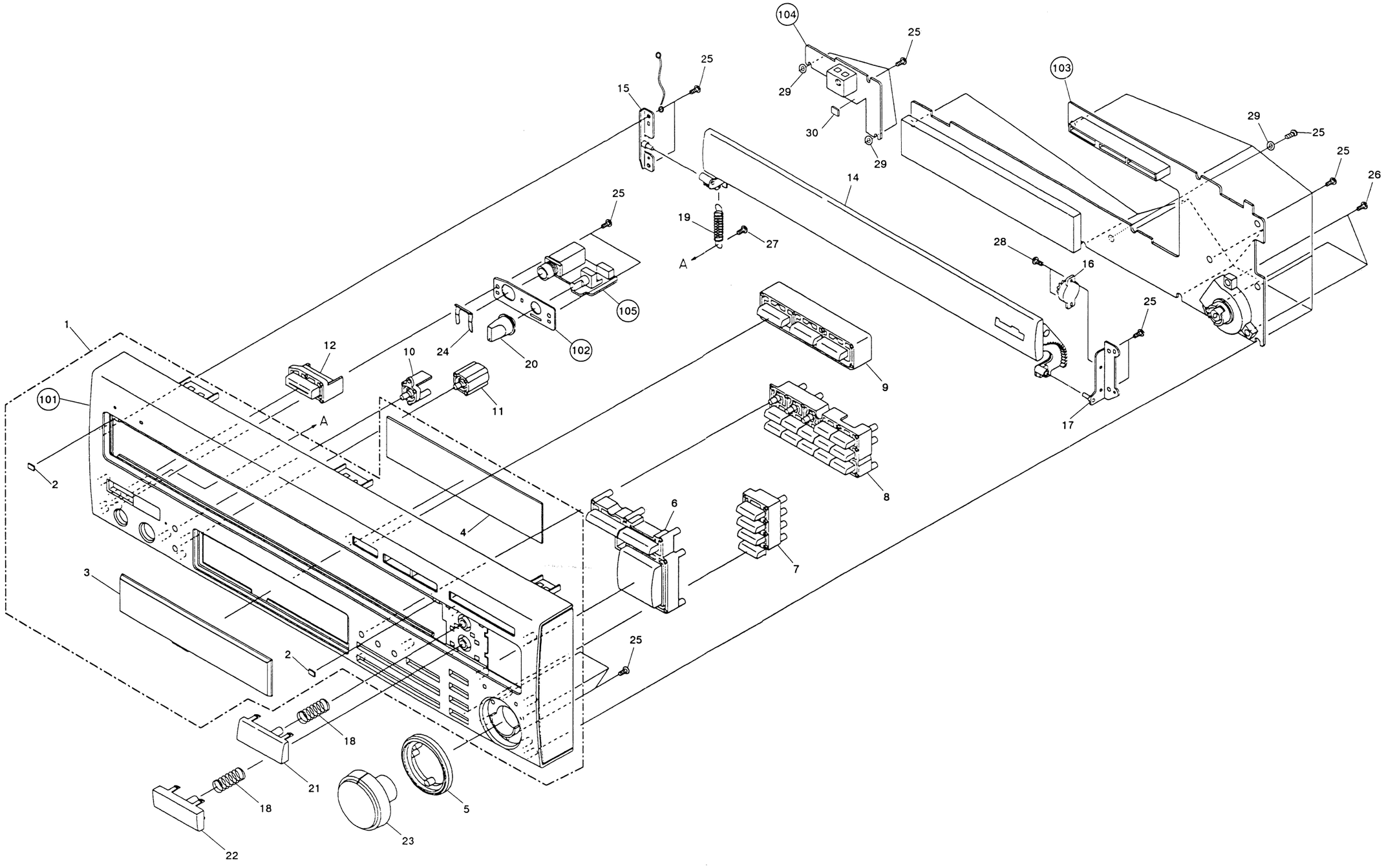
2.2 FRONT PANEL SECTION

Parts List

Mark	No.	Description	Part No.
	1	Front panel assembly - S	VXX1591
	2	Door dump rubber	VEB1141
	3	FL lens	VNK1540
	4	FL filter	VNK1541
	5	Scan escutcheon	VNK1589
	6	Main key	VNK1676
	7	Sub key	VNK1555
	8	Ten key	VNK1542
	9	L key assembly	VXA1519
	10	Gold button (A)	VNK1547
	11	Gold button (B)	VNK1559
	12	PW button	VNK1536
	13	• • • • •	
	14	Front door assembly	VXA1800
	15	Hinge plate assembly	VXA1518
	16	Dumper assembly	VXA1053
	17	Dumper plate assembly	VXA1517
	18	Button spring	VBH1137
	19	Door spring	VBH1167
	20	Volume knob	VNK1539
	21	O/C button	VNK1675
	22	Stop button	VNK1678
	23	Scan dial (L)	VNK1588
	24	Snap plate	VNE1102
	25	Screw	BPZ26P060FCU
	26	Screw	BPZ26P080FMC
	27	Screw	IPZ26P060FMC
	28	Screw	PMZ20P040FCU
	29	Fiber washer	VEC1254
	30	Stopper rubber	VEB1149

Mark	No.	Description	Part No.
	101	Front panel assembly	VXA1655
	102	Jack holder	VNE1555
	103	FLKY assembly	VWG1220
	104	PSWB assembly	VWG1217
	105	HEPB assembly	VWV1156

Note: 103 FLKY, 104 PSWB and 105 HEPB assembly are supplied for service as the FLKB assembly (VWM1176).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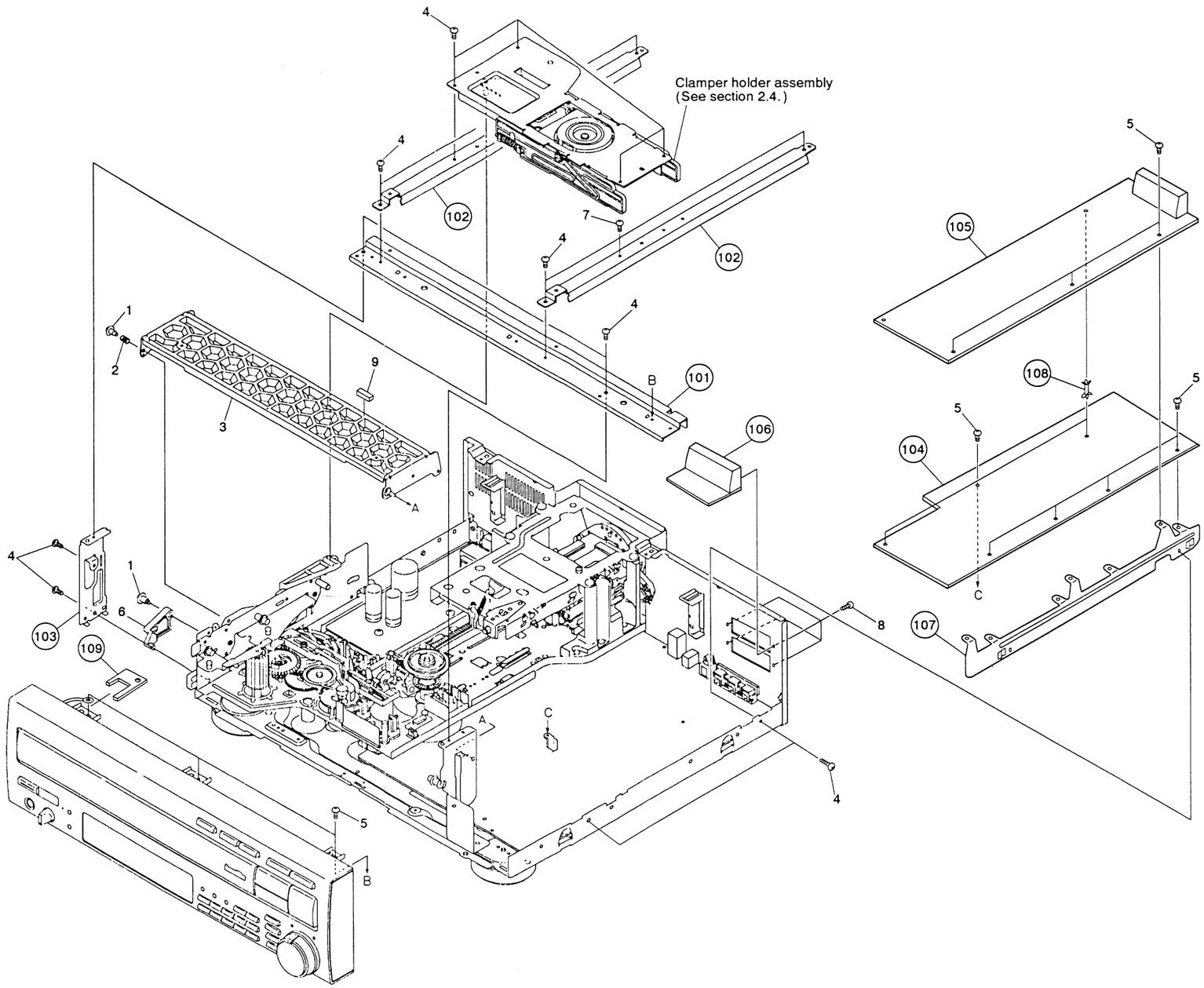
2.3 TOP VIEW SECTION

Parts List

Mark	No.	Description	Part No.
	1	Screw (B)	VBA1008
	2	Arm spring	VBH1093
	3	Tray guide assembly	VXA1576
	4	Screw	BBZ30P060FCC
	5	Screw	IBZ30P060FCC
	6	Door lever	VNL1330
	7	Screw	BSZ30P200FMC
	8	Screw	BBZ30P080FCC
	9	Stopper rubber	VEB1119
	101	Front angle	VNE1543
	102	Center angle	VNE1761
	103	Side stay (L)	VNE1545
	104	VDTB board assembly	VWS1094
	105	PALB board assembly	VWV1190
	106	SCRT board assembly	VWV1196
	107	PCB holder	VNE1652
	108	PC support	VEC1508
	109	Reinforced plate	VNE1529

Note:104 VDTB 105 PALB and 106 SCRT board assembly are supplied for service as the VTPB board assembly (VWM1167).

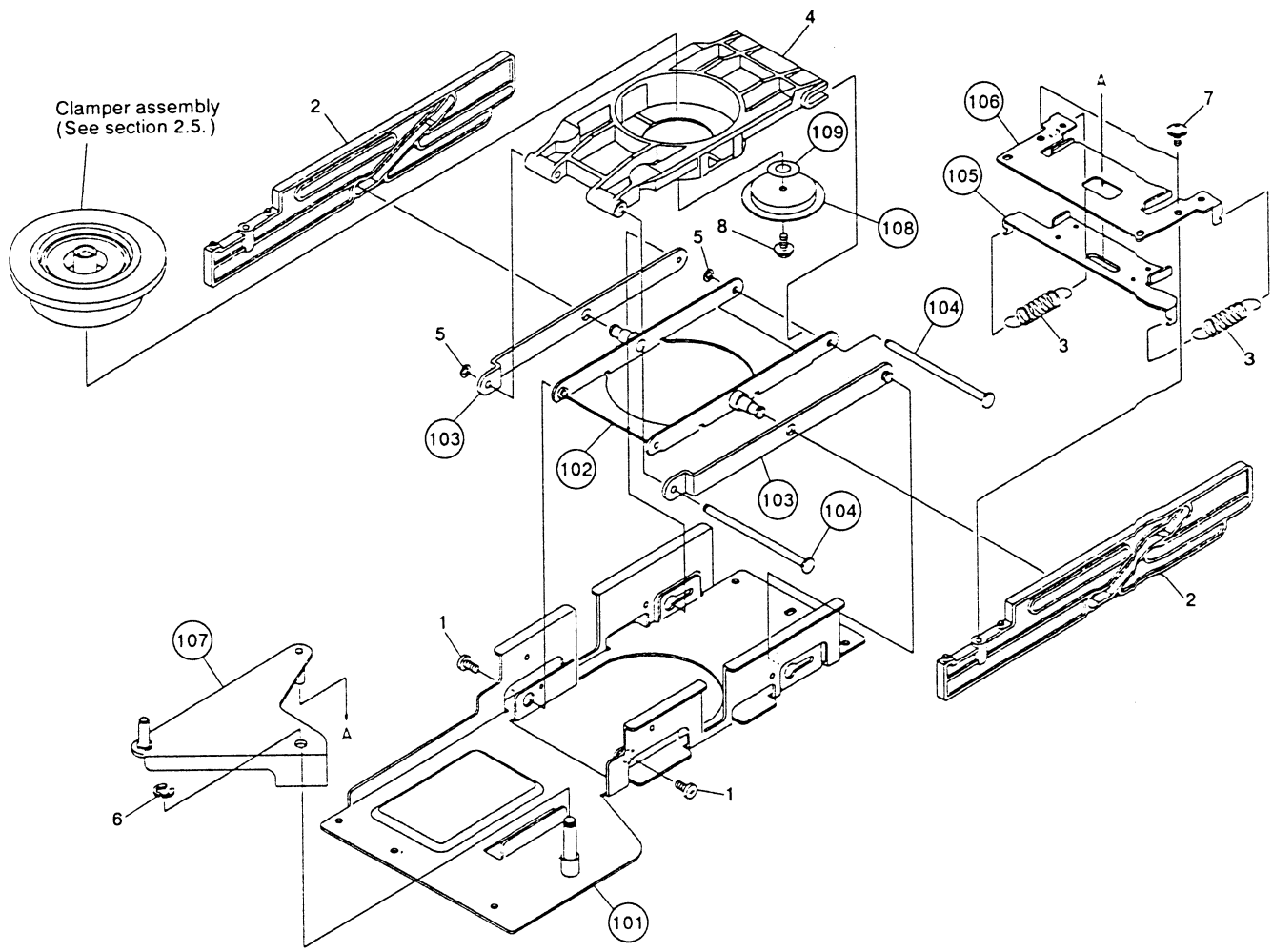


2.4 CLAMPER SECTION

Parts List

Mark No.	Description	Part No.
1	Pivot screw	VBA1022
2	Clamp cam	VNL1306
3	Limiter spring	VBH1168
4	Clamper holder	VNL1305
5	Washer	WT26D060D050
6	E ring	YE40FUC
7	Screw	IPZ30P060FMC
8	Screw	IPZ30P080FCC

Mark No.	Description	Part No.
101	Center plate assembly	VXA1506
102	Lever (B) assembly	VXA1504
103	Lever (A) assembly	VXA1503
104	Clamp shaft	VLL1299
105	Limiter plate	VNE1551
106	Slide plate	VNE1556
107	Lever (C) assembly	VXA1505
108	Clamper head	VNE1546
109	Spacer	VNE1676

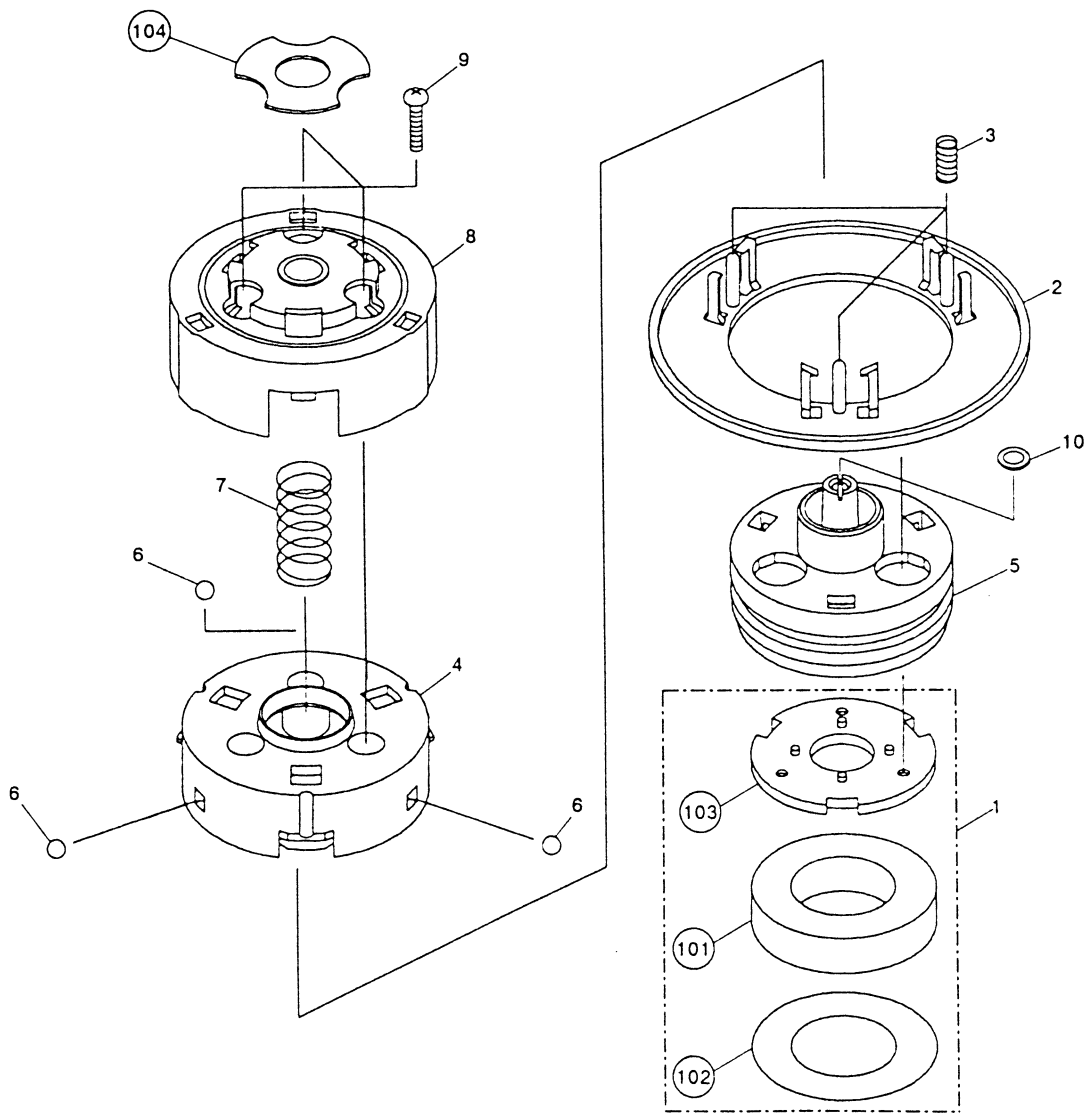


2.5 CLAMPER ASSEMBLY

Parts List

Mark No.	Description	Part No.
1	Magnet assembly-S	VXX1475
2	Disc clamper	VNL1362
3	Clamper spring	VBH1153
4	Clamper base	VNL1364
5	Centering hab (B)	VNL1435
6	Steel ball	VNX1006
7	Centering spring (B)	VBH1130
8	Clamper cover	VNL1363
9	Screw	AMZ20P040FMC
10	Washer	WA60F115M160

Mark No.	Description	Part No.
101	Magnet	VMG1010
102	Gap sheet	VEC1534
103	Clamper plate	VNE1549
104	Absorber rubber(A)	VEB1146

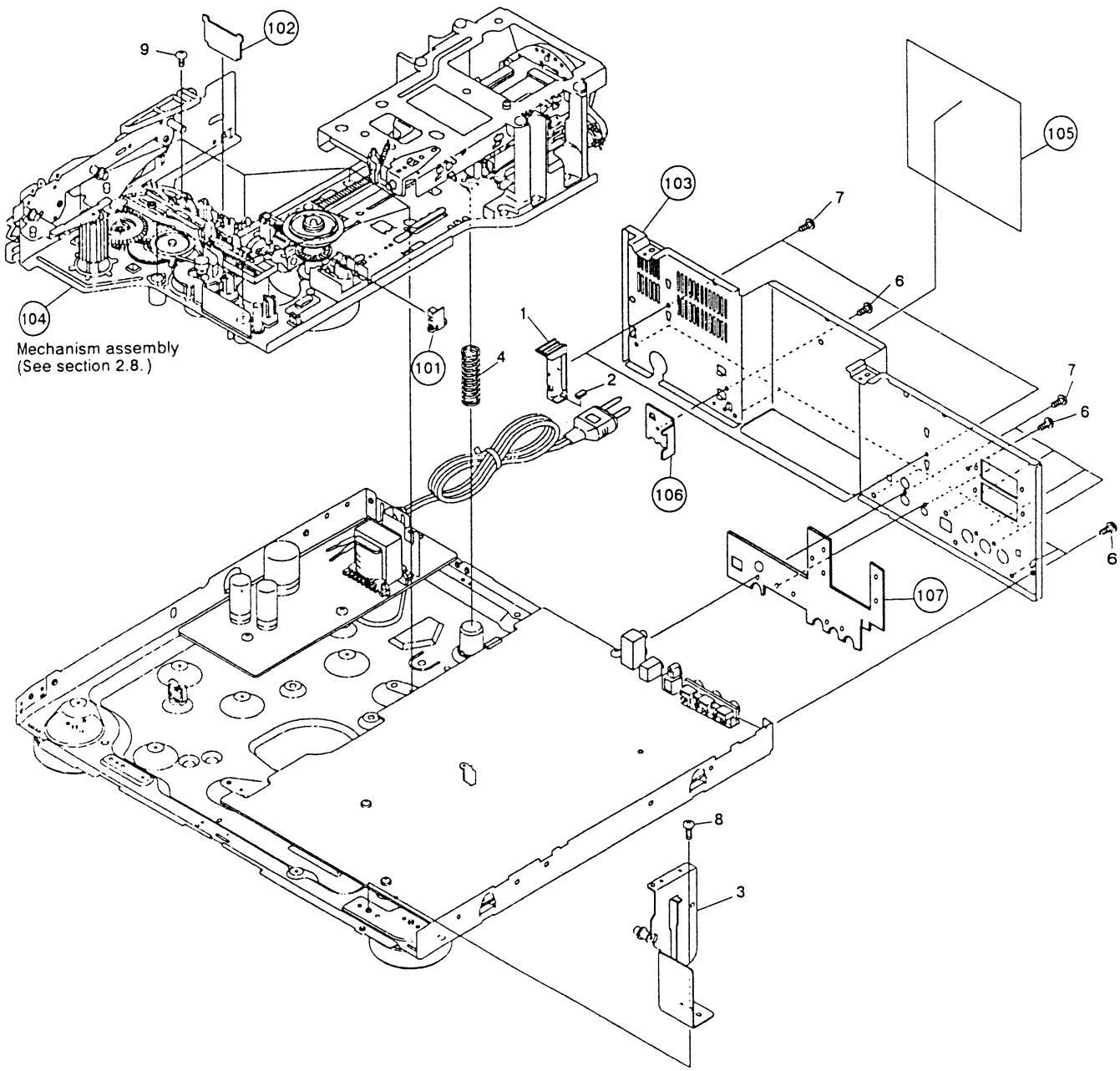


2.6 BASE SECTION (1)

Parts List

Mark	No.	Description	Part No.
	1	Tray stopper	VNL1202
	2	Door dump rubber	VEB1033
	3	Side stay (R) assembly	VXA1690
	4	Base spring	VBH1145
	5	• • • • •	
	6	Screw	BBT30P060FCC
	7	Screw	BPZ30P080FCU
	8	Screw	BBZ30P060FCC
	9	Screw (B)	VBA1023
	101	FG board assembly	VWG1214
	102	SW2 board assembly	VWG1213
	103	Rear panel	VNA1205
	104	Mechanism assembly	VWT1078
	105	Rear label	VRW1206
	106	TB holder	VNE1612
	107	Rear earth	VNE1675

Note:101 FG and 102 SW2 board assembly are supplied for service as the MAIN board assembly (VWM1165)

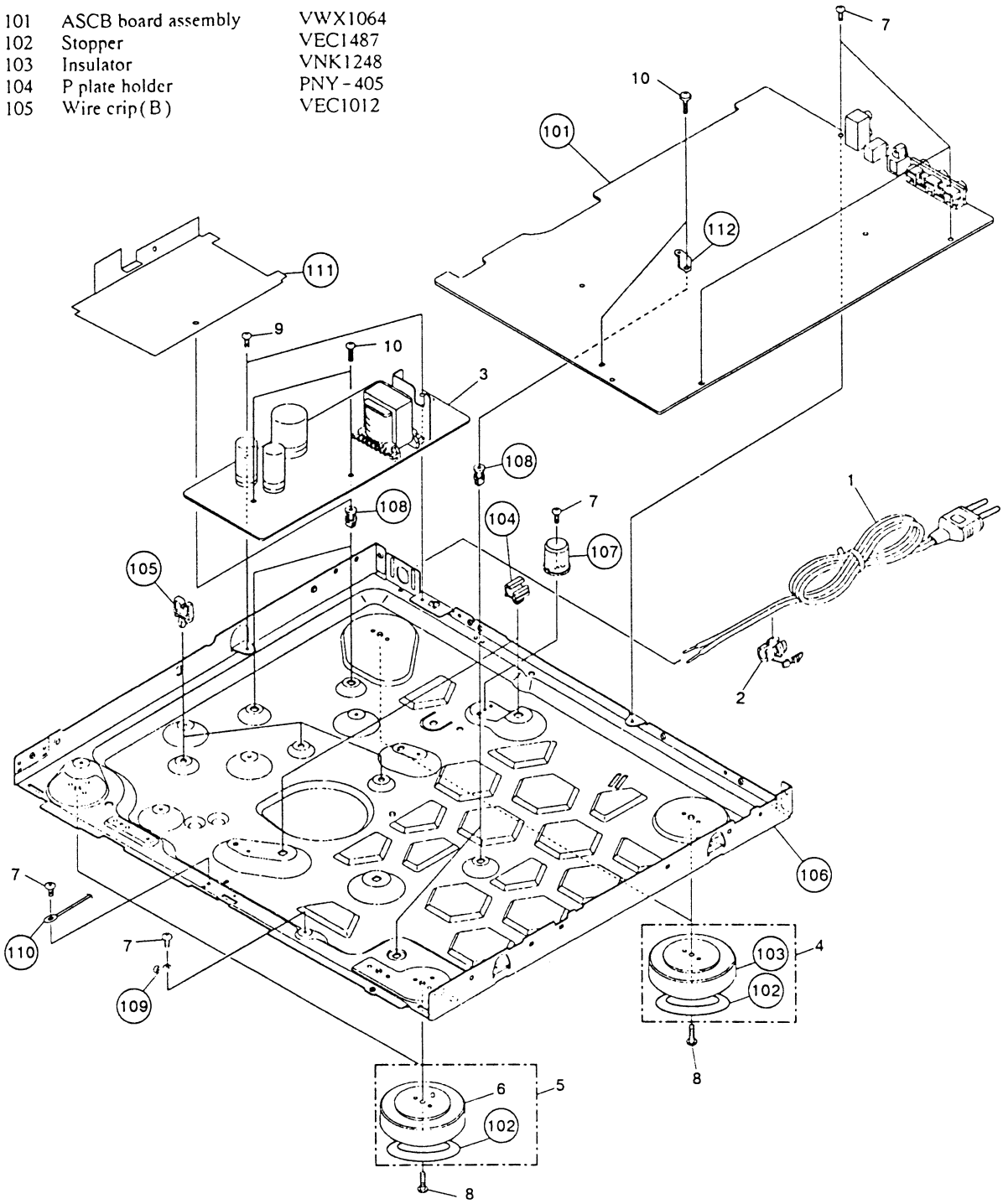


2.7 BASE SECTION (2)

Parts List

Mark	No.	Description	Part No.
⚠	1	AC power cord	VDG1028
⚠	2	Strain relief	CM-22B
	3	Power supply board assembly	VWR1121
	4	Insulator assembly	VXA1687
	5	Insulator assembly	VXA1686
	6	Insulator	VNK1095
	7	Screw	BBZ30P060FCC
	8	Screw	BBZ30P080FCC
	9	Screw	IBZ30P060FCC
	10	Screw	IPZ30P160FMC
	101	ASCB board assembly	VWX1064
	102	Stopper	VEC1487
	103	Insulator	VNK1248
	104	P plate holder	PNY-405
	105	Wire crip(B)	VEC1012
	106	Base chassis	VNA1173
	107	Spring guide	VNL1343
	108	PCB spacer	PNY-404
	109	Cord holder	PNF-069
	110	Earth lug assembly	VDA1347
	111	Power supply insulation sheet	VEC1492
	112	PCB holder(C)	VNE1329

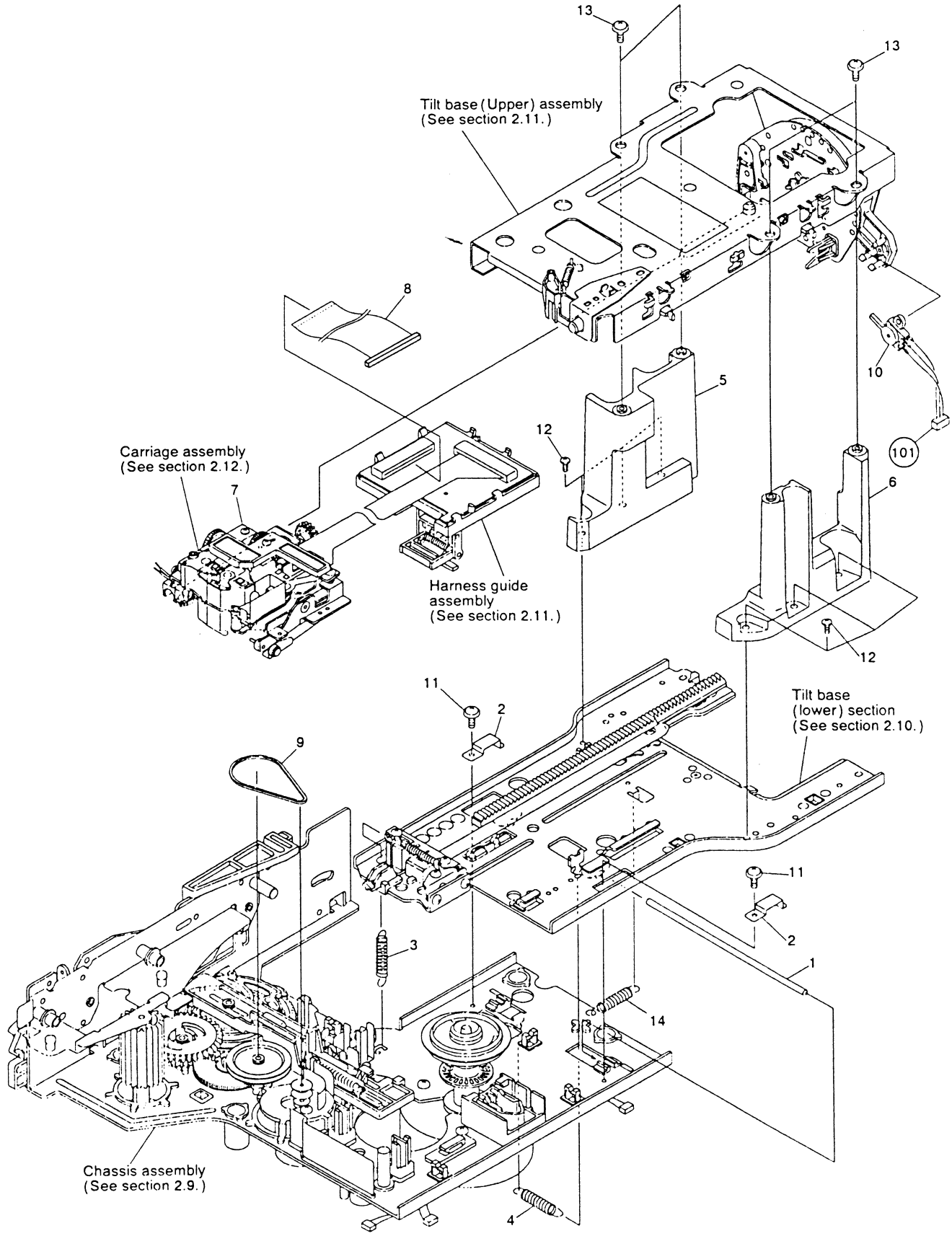
Note:101 ASCB board assembly is supplied for service as the MAIN board assembly(VWM1165).



2.8 MECHANISM ASSEMBLY

Parts List

Mark	No.	Description	Part No.
	1	Tilt shaft	VLL1326
	2	Plate spring	VBK1013
	3	Tilt spring	VBH1146
	4	Thrust spring	VBH1163
	5	Post (L)	VNL1489
	6	Post (R)	VNL1488
◉	7	Carriage assembly	VWT1068
	8	Flexible cable (22P)	VDA1329
	9	Belt	PEB1013
	10	Lever switch (TURN SW)	DSK1003
	11	Screw	ABZ26P050FMC
	12	Screw	IBZ30P100FMC
	13	Screw	IPZ30P100FCU
	14	Radial spring	VBH1164
	101	Housing assembly (3P)	VKP1856


13
13
Tilt base (Upper) assembly
(See section 2.11.)
8
10
5
12
101
Carriage assembly
(See section 2.12.)
7
6
Harness guide
assembly
(See section 2.11.)
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11
2
Tilt base
(lower) section
(See section 2.10.)
9
11
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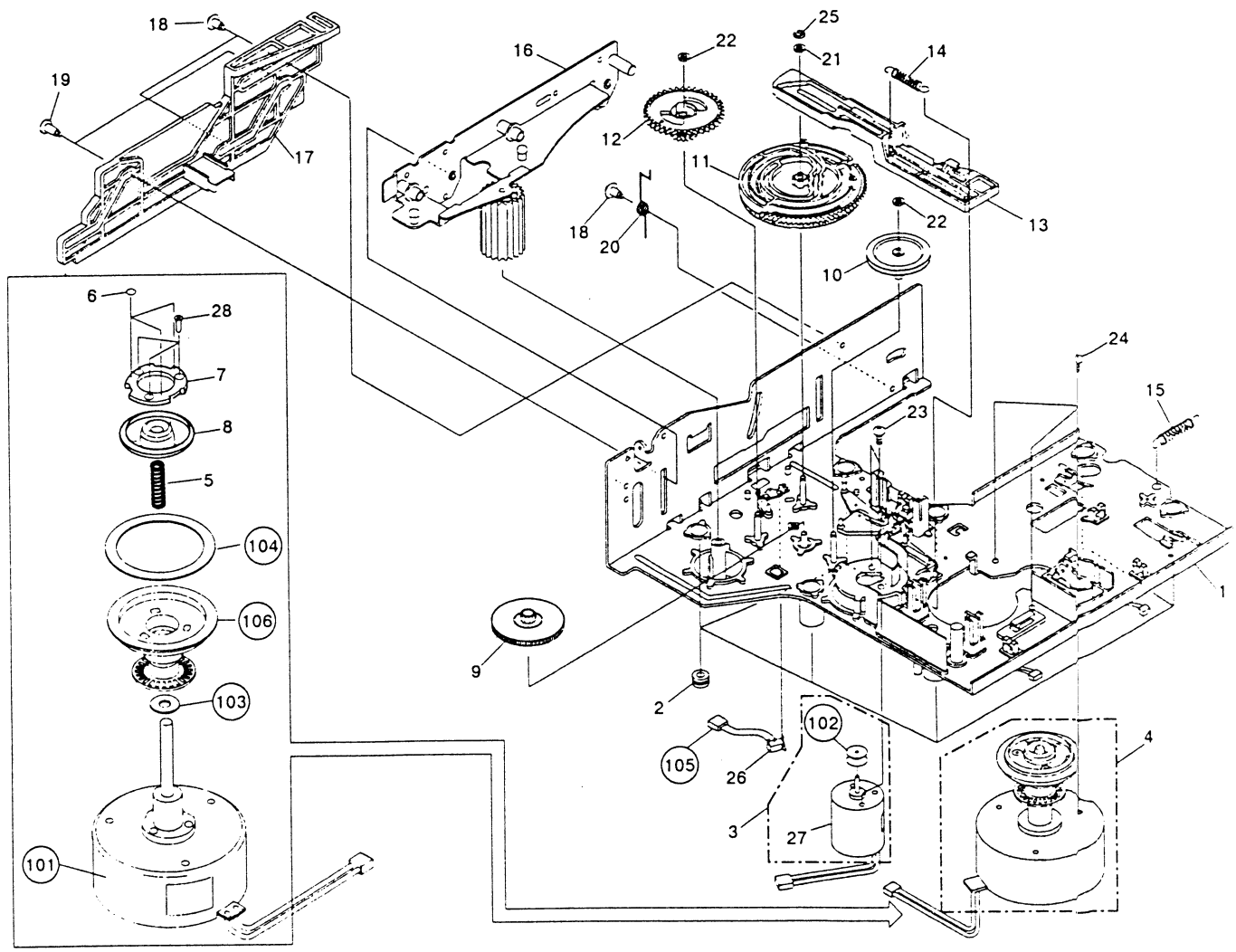
3
1
14
Chassis assembly
(See section 2.9.)
4

2.9 MECHANISM CHASSIS SECTION

Parts List

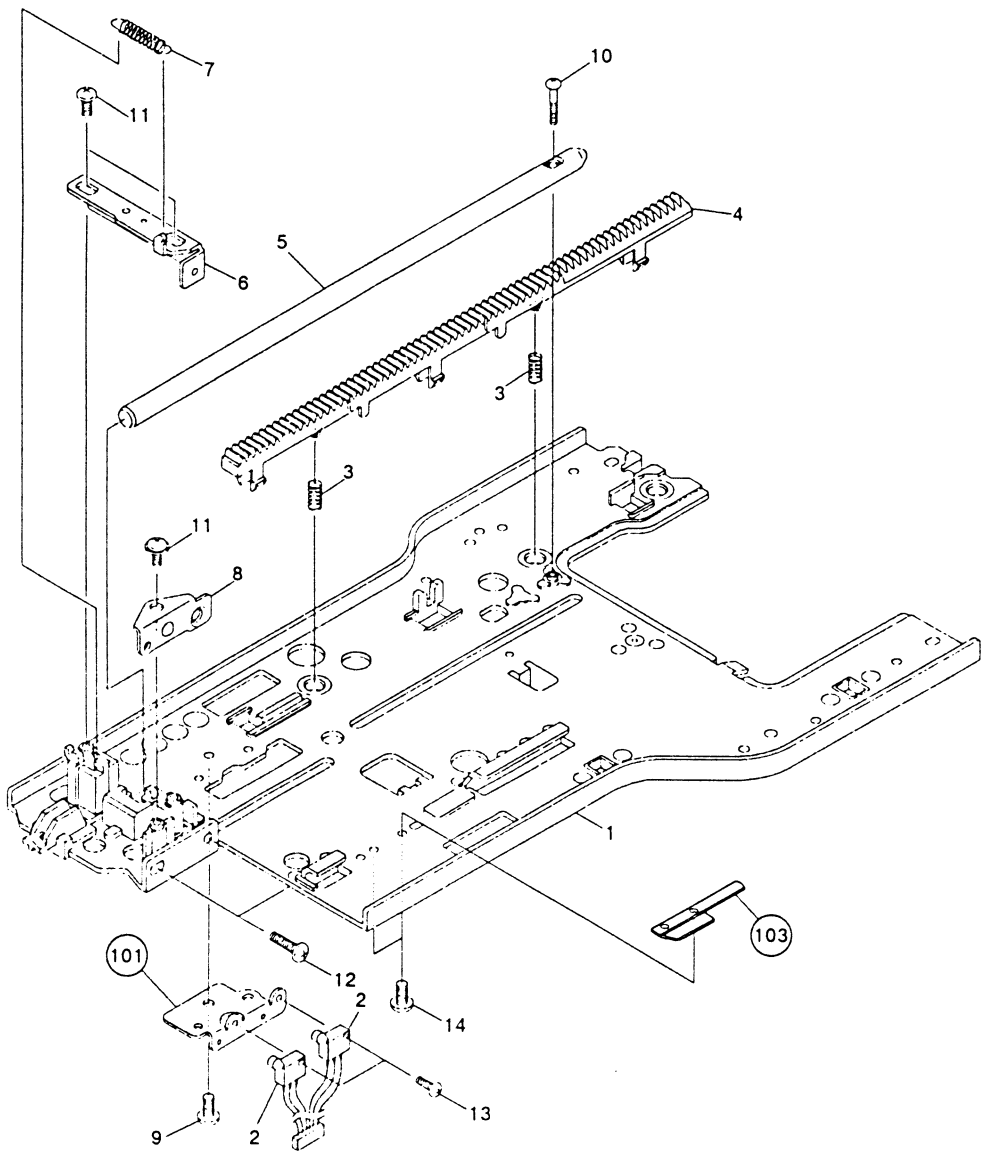
Mark	No.	Description	Part No.
◉	1	Chassis assembly	VXA1577
	2	Rubber bushing	VEB1138
	3	Loading motor assembly	VXX1262
	4	Spindle motor assembly	VXA1761
	5	Centering spring	VBH1024
	6	Sheet	VEC1510
	7	Yoke plate A	VNE1360
	8	Centering hab (A)	VNL1296
	9	Two stair gear	VNL1326
	10	Gear pulley	VNL1249
	11	Cam gear	VNL1350
	12	Follow gear	VNL1317
	13	Spring slanting cam	VNL1316
	14	Cam spring	VBH1082
	15	Radial spring	VBH1164
	16	Roller plate assembly	VXA1770
	17	Slide cam	VNL1304
	18	Screw (B)	VBA1008
	19	Screw (C)	VBA1015
	20	Return spring	VBH1129
	21	Nylon washer	WA32N080W020
	22	Washer	WT26D047D025
	23	Screw	PMZ30P040FCU
	24	Screw	PMA30P050FCU
	25	E ring 2,3	YE23FUC
	26	Push switch (TRAY SW)	DSG1014
	27	Loading motor	VXM1034
	28	Screw	CPZ20P080FMC
	101	Spindle motor	VXM1046
	102	Motor pulley	VLL1176
	103	Oil stopped washer	VBF1002
	104	Rubber sheet	VEB1135
	105	Housing assembly	VKP1566
	106	Turn table assembly	VXA1760



2.10 TILT BASE (LOWER) SECTION

Parts List

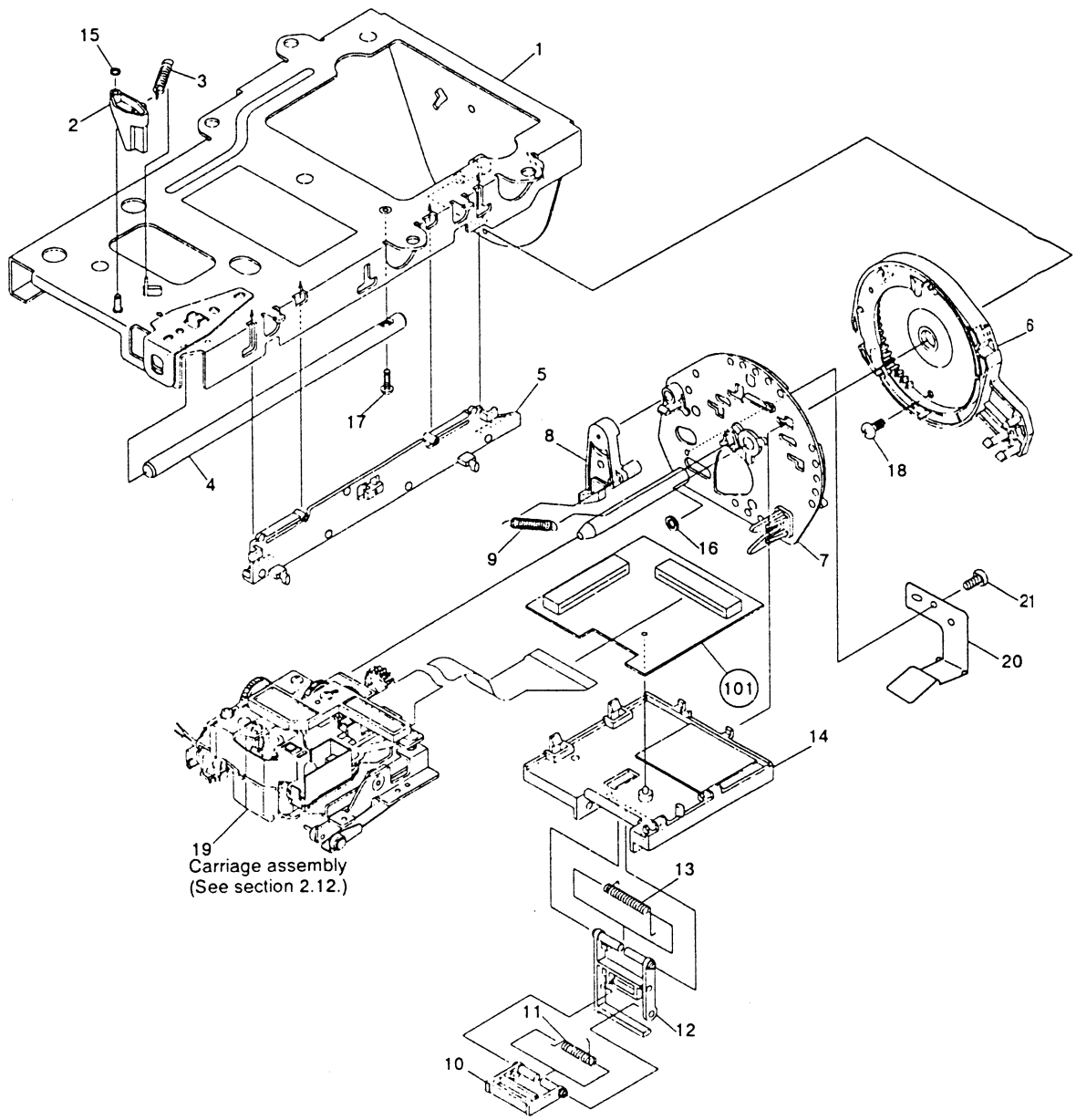
Mark	No.	Description	Part No.
◉	1	Tilt base (Lower) assembly	VXA1798
	2	Slide switch (LD,CDV INSIDE)	OSH1001
	3	Rack spring	VBH1133
	4	Rack gear (lower)	VNL1346
	5	Carriage shaft (lower)	VLL1325
	6	Shaft plate (lower) assembly	VXA1626
	7	S plate spring	VBH1149
	8	S plate holder	VNE1621
	9	Screw	BBZ30P060FCC
	10	Screw	PPZ20P120FMC
	11	Screw	IPZ26P060FMC
	12	Screw	BMZ26P100FMC
	13	Screw	PMZ20P060FMC
	14	Screw	PMZ20P030FMC
	101	SW holder	VNE1620
	102	• • • • •	
	103	Roller shaft holder plate	VNE1666



2.11 TILT BASE (UPPER) SECTION

Parts List

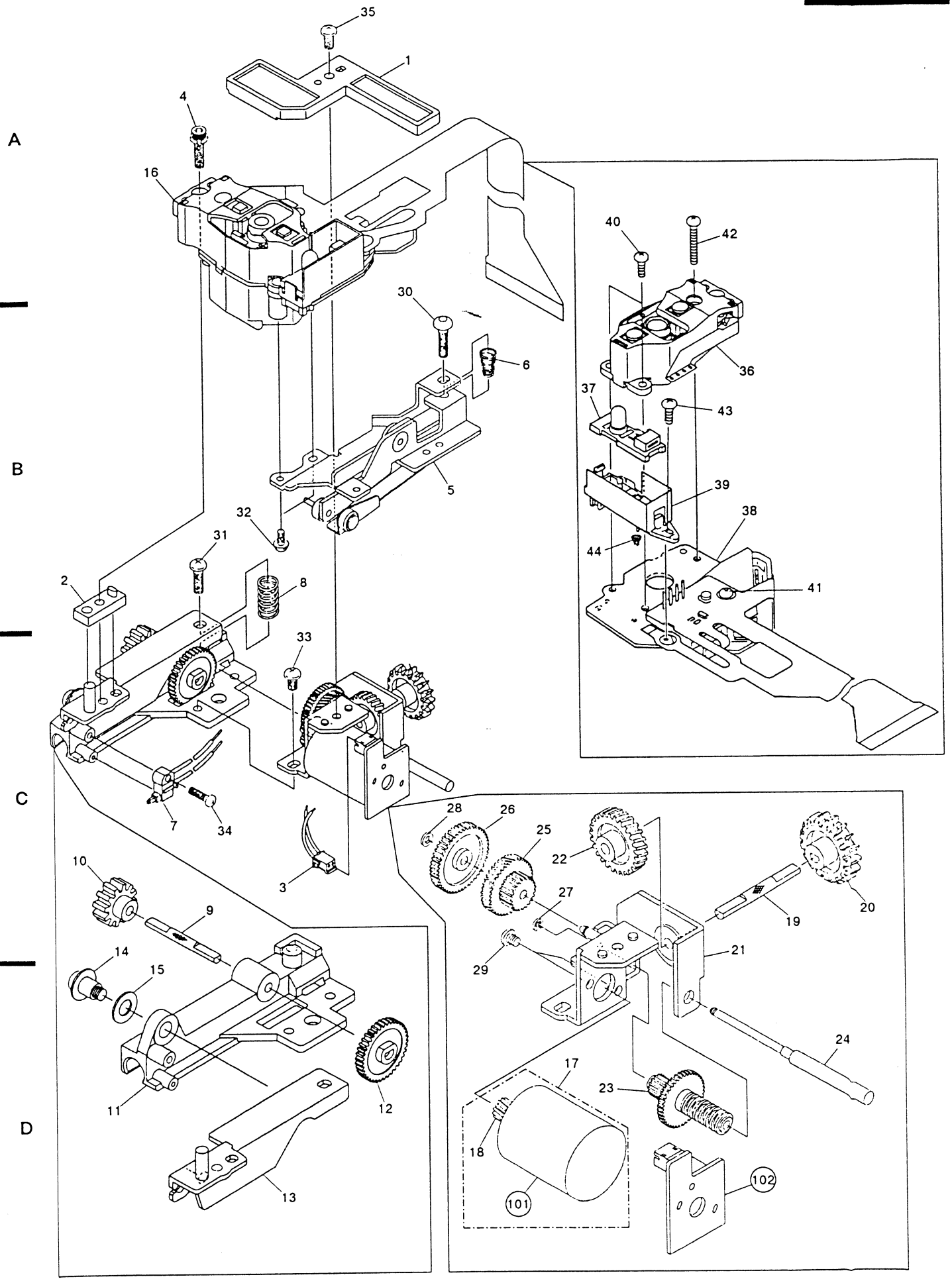
Mark	No.	Description	Part No.
	1	Tilt base (upper) assembly	VXA1808
	2	SW lever	VNL1359
	3	SW lever spring	VBH1150
	4	Carriage shaft (upper)	VLL1324
	5	Rack gear (upper)	VNL1345
	6	Internal gear assembly	VXA1491
◉	7	R plate assembly	VXA1579
	8	Lock lever	VNL1351
	9	Lever spring	VBH1127
	10	Harness guide (C)	VNL1361
	11	Guide spring (B)	VBH1155
	12	Harness guide (B)	VNL1408
	13	Guide spring (A)	VBH1166
	14	Harness guide (A)	VNL1349
	15	Washer	WT16D032D025
	16	Washer	WT36D072D050
	17	Screw	PMZ20P120FMC
	18	Screw	BBZ26P050FCC
◉	19	Carriage assembly	VWT1068
	20	Rock plate	VBK1026
	21	Screw	IBZ20P040FCC
	101	CNNB assembly	VWG1194



2.12 CARRIAGE ASSEMBLY

Parts List

Mark No.	Description	Part No.
1	Flexible holder	VNL1358
2	PU base	VNT1037
3	Housing assembly (1.5MP2P)	VKP1852
4	Bolt 2.6X10	VLL1192
5	TAN base assembly	VXA1752
6	TAN spring	VBH1151
7	Slide switch (CD.B INSIDE)	VSK1008
8	TRKG spring	VBH1152
9	SL shaft (B)	VLL1334
10	Gear (F)	VNL1356
11	Carriage shaft holder	VNT1039
12	Gear (E)	VNL1355
13	PU plate assembly	VXA1583
14	Screw 4	VLL-183
15	Spring washer ϕ4	VEF-027
16	Pickup assembly-S	VXX1553
17	Carriage motor assembly-S	VXX1537
18	SL gear (A)	VNL1250
19	SL Shaft (C)	VLL1289
20	Gear (G)	VNL1365
21	Motor holder assembly	VXA1751
22	Gear (H)	VNL1357
23	Gear (C)	VNL1353
24	SL Shaft (A)	VLL1333
25	Gear (B)	VNL1352
26	Gear (D)	VNL1354
27	Stop ring	YE12FUC
28	Washer	WT17D034D050
29	Screw	JGZ20P022FMC
30	Screw	PMZ26P100FMC
31	Screw	BMZ26P080FMC
32	Screw	PMA20P040FMC
33	Screw	PMH26P050FMC
34	Screw	PBZ20P070FCC
35	Screw	BBZ26P050FMC
36	Actuator assembly	VXX1551
37	Sensor assembly	VEX1018
38	Pre-pickup assembly	VXX1554
39	Sensor stay	VNH1024
40	Screw	PMA20P060FMC
41	Screw	PMA20P080FMC
42	Screw	PMA20P160FMC
43	Screw	BMZ20P060FMC
44	Sensor spring	VBH1087
101	Slider motor	VXM1027
102	SLMB assembly	VNP1295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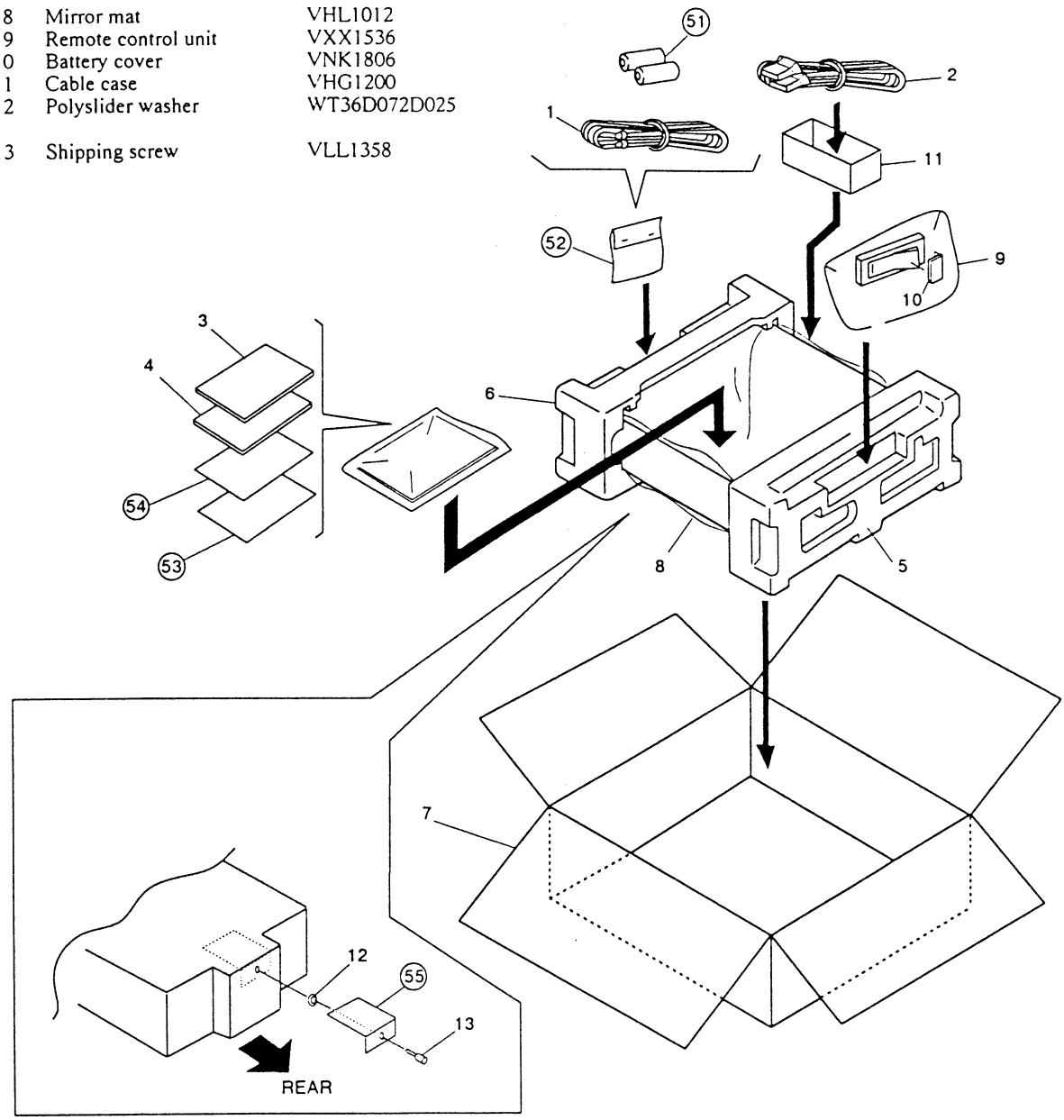
2.13 PACKING

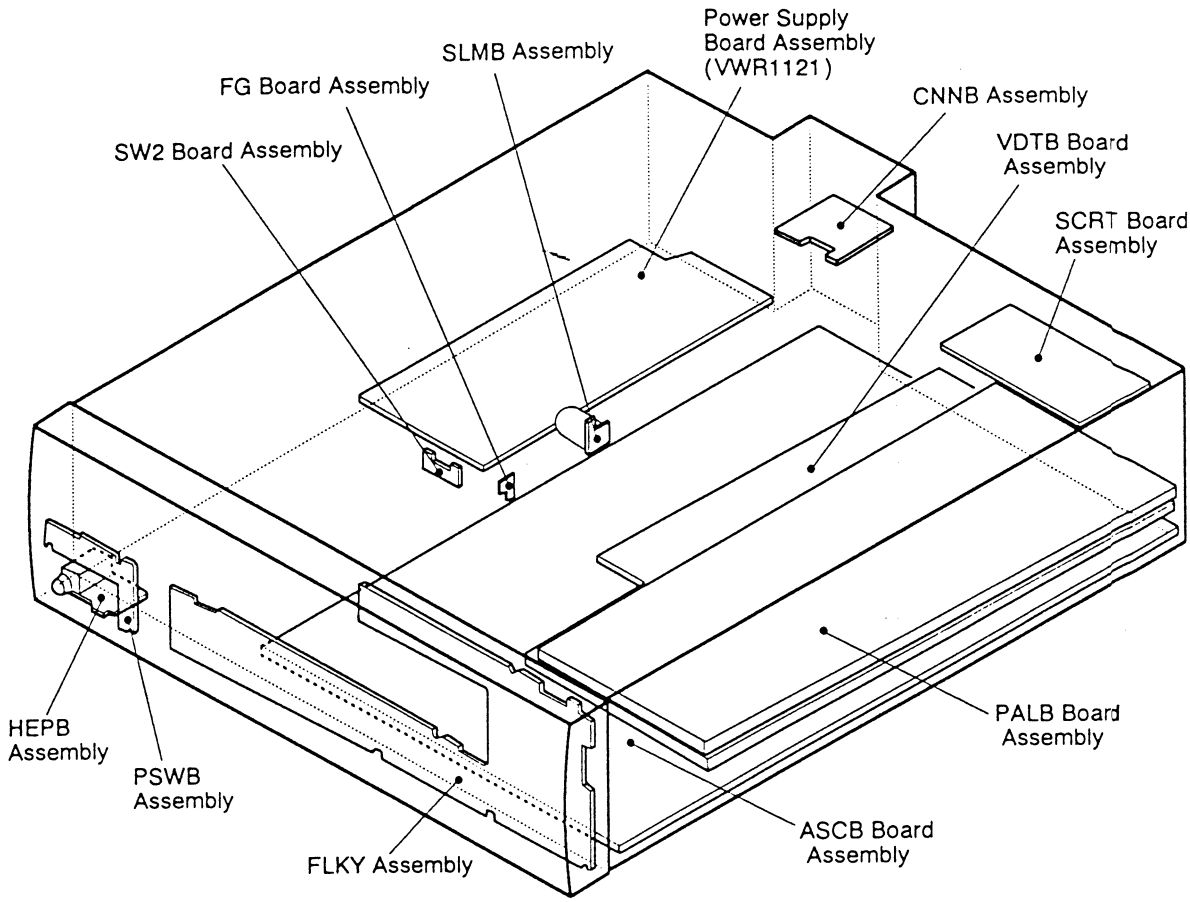
Parts List

Mark	No.	Description	Part No.
	1	Connection cord	VDE-055
	2	Euroconnector cable (SCART ⟷ SCART)	VDE1022
	3	Operating instructions (English/French/German/Italian)	VRE1007
	4	Operating instructions (Dutch/Swedish/Spanish/Portuguese)	VRF1012
	5	Pad (F)	VHA1070
	6	Pad (R)	VHA1071
	7	Packing case	VHG1161
	8	Mirror mat	VHL1012
	9	Remote control unit	VXX1536
	10	Battery cover	VNK1806
	11	Cable case	VHG1200
	12	Polyslider washer	WT36D072D025
	13	Shipping screw	VLL1358

Mark	No.	Description	Part No.
	51	Dry cell battery (R03, AAA)	VEM-022
	52	Polyethylene bag	VHL-014
	53	Caution card	VRR1008
	54	Caution card (EW)	VRM1027
	55	TAC card	VRW1240



3. P. C. BOARDS LOCATION



MAIN BOARD ASSEMBLY (VWM1165)

MAIN board assembly is composed of ASCB, FG and SW2 board assemblies.

VTPB BOARD ASSEMBLY (VWM1167)

VTPB board assembly is composed of VDTB, PALB and SCRT board assemblies.

FLKB ASSEMBLY (VWM1176)

FLKB assembly is composed of FLKY, PSWB and HEPB assemblies.

ASCB	: AUDIO SERVO CONTROL BOARD
FG	: FG COUNTER BOARD
SW2	: SW2 BOARD
VDTB	: VIDEO AND TBC BOARD
PALB	: PAL BOARD
SCRT	: EUROPEAN SCRT BOARD
FLKY	: FL TUBE AND KEY BOARD
PSWB	: POWER SWITCH BOARD
HEPB	: HEADPHONE BOARD

4.SCHEMATIC AND P.C. BOARDS DIAGRAM

1. RESISTORS:
   Indicated in Ω , 1/4W, 1/6W and 1/8W, ±5% tolerance unless otherwise noted k:k Ω , M:M Ω , (F): ± 1%, (G): ± 2%,(K): ± 10%, (M): ± 20% tolerance.

2. CAPACITORS:
   Indicated in capacity (μF) /voltage(V)unless otherwise noted p:pF. Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
   ⌈ ⌉ :DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.
   ⇦ mA :DC current at no input signal.

4. OTHERS:
   ➡ :Signal route.
   ⊘ :Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※ marked capacitors and resistors have parts numbers.

   This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES :(The underlined indicates the switch position)
   OUTSIDE OF P.C. BOARDS
   - Push switch :TRAY SW
   - Lever switch :TURN SW
   - Slide switch :LD, CDV INSIDE
   - Slide switch :CD, B INSIDE

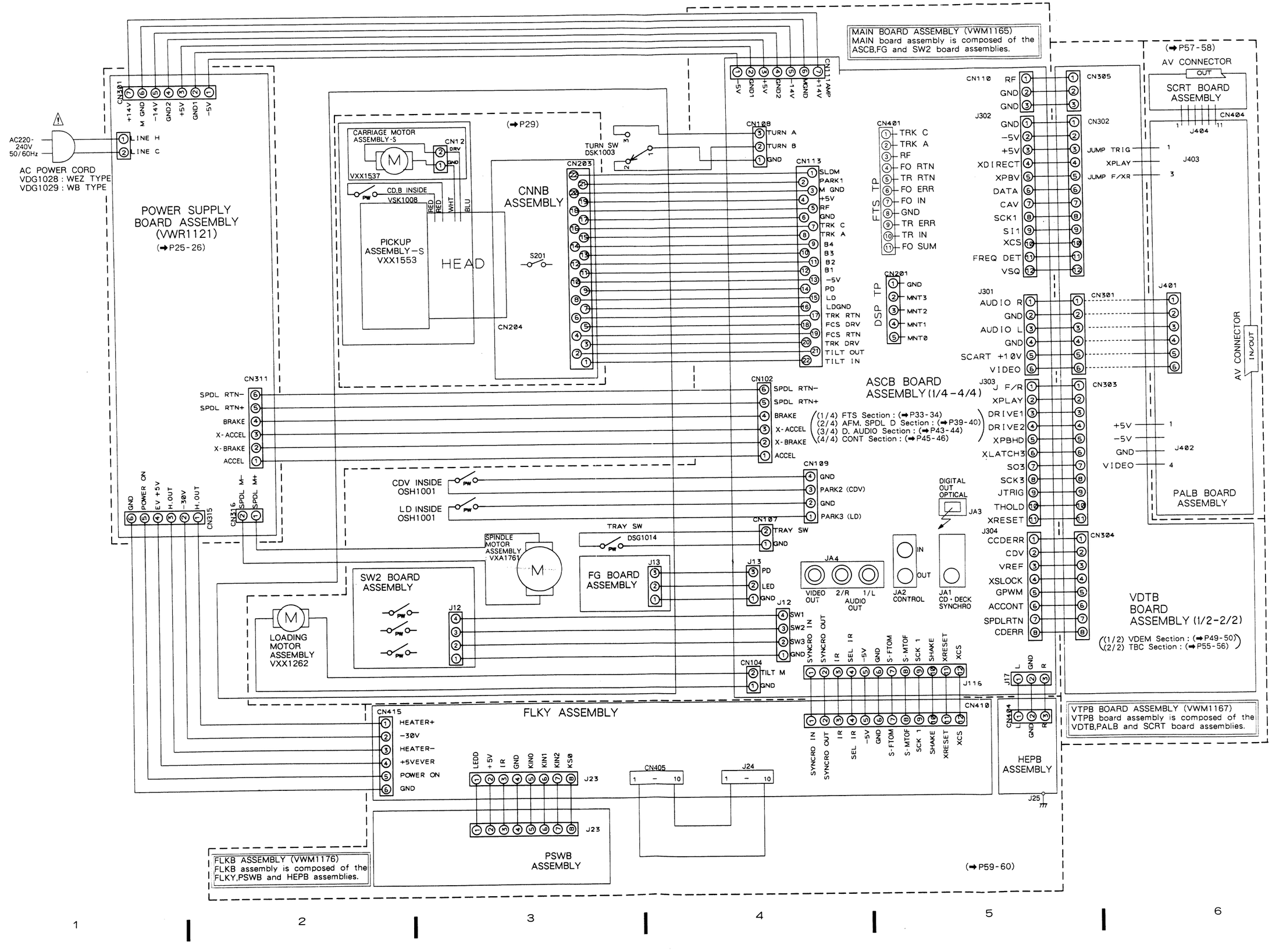
   SW2 BOARD ASSEMBLY
   - S101 - S103 : LOADING, TILT

   FLKY ASSEMBLY
   - S101 :DOOR
   - S102 :SINGLE
   - S103 :EDIT
   - S104 :LANGUAGE
   - S105 :+10
   - S106 :PGM
   - S107 :1
   - S108 :2
   - S109 :3
   - S110 :4
   - S111 :5
   - S112 :6
   - S113 :7
   - S114 :8
   - S115 :9
   - S116 :0
   - S117 :DIRECT CD
   - S118 :A, S119 :B] DISC SIDE
   - S120 :|◀◀, S121 :▶▶|] SKIP
   - S122 :OPEN / CLOSE (▲)
   - S123 :STOP (■)
   - S124 :PLAY / PAUSE (▶ / ❚❚)
   - S125 :RANDOM PLAY
   - S126 :INTRO SCAN
   - S127 :A, S128 :B] REPEAT
   - S129 :SCAN

   PSWB ASSEMBLY
   - S301 :AUDIO
   - S302 :DISPLAY
   - S303 :POWER

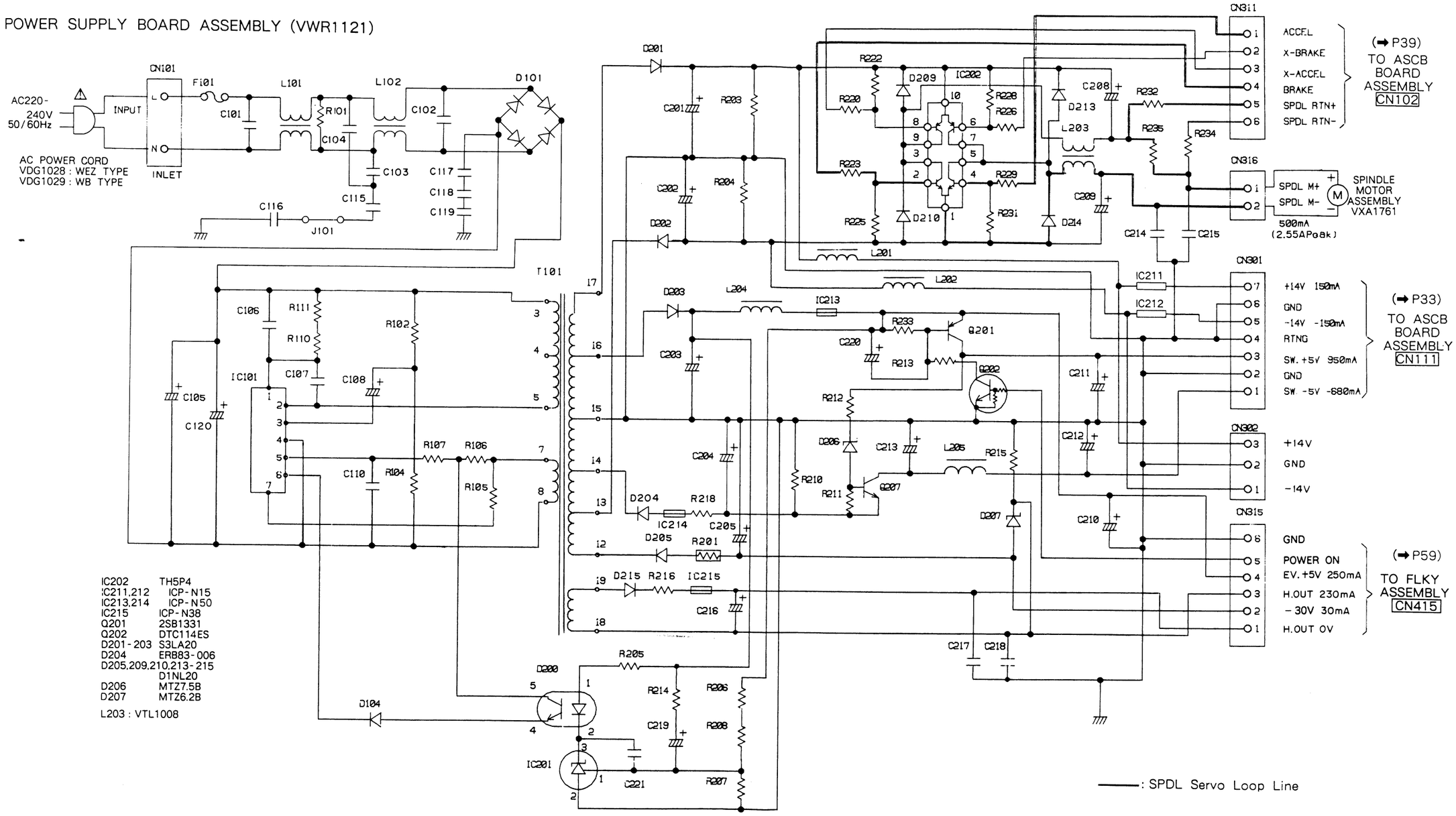
   CNNB ASSEMBLY
   - S201 : PARK

4.1 OVERALL WIRING DIAGRAM



4.2 POWER SUPPLY BOARD ASSEMBLY

POWER SUPPLY BOARD ASSEMBLY (VWR1121)

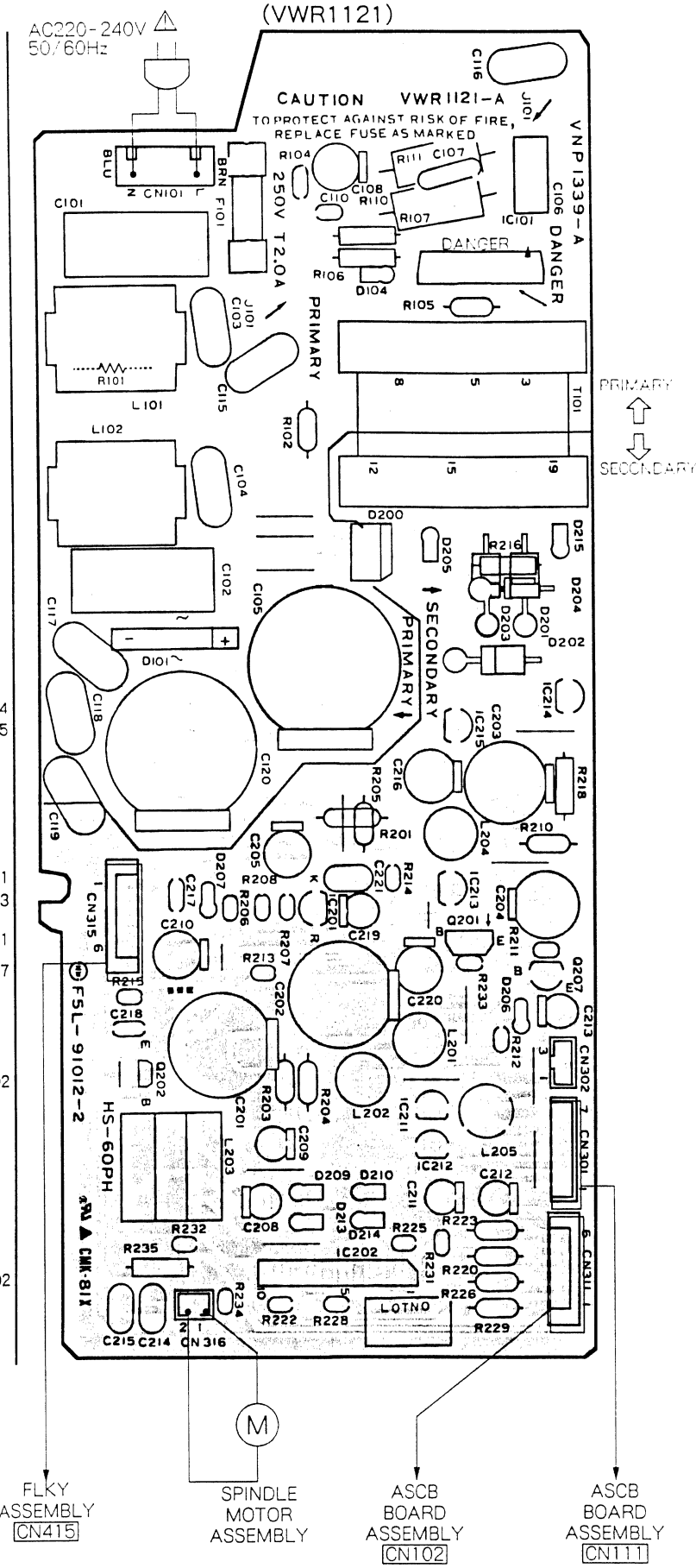


IC202 TH5P4
IC211,212 ICP-N15
IC213,214 ICP-N50
IC215 ICP-N38
Q201 2SB1331
Q202 DTC114ES
D201-203 S3LA20
D204 ERB83-006
D205,209,210,213-215 D1NL20
D206 MTZ7.5B
D207 MTZ6.2B

L203 : VTL1008

——: SPDL Servo Loop Line

POWER SUPPLY BOARD ASSEMBLY (VWR1121)

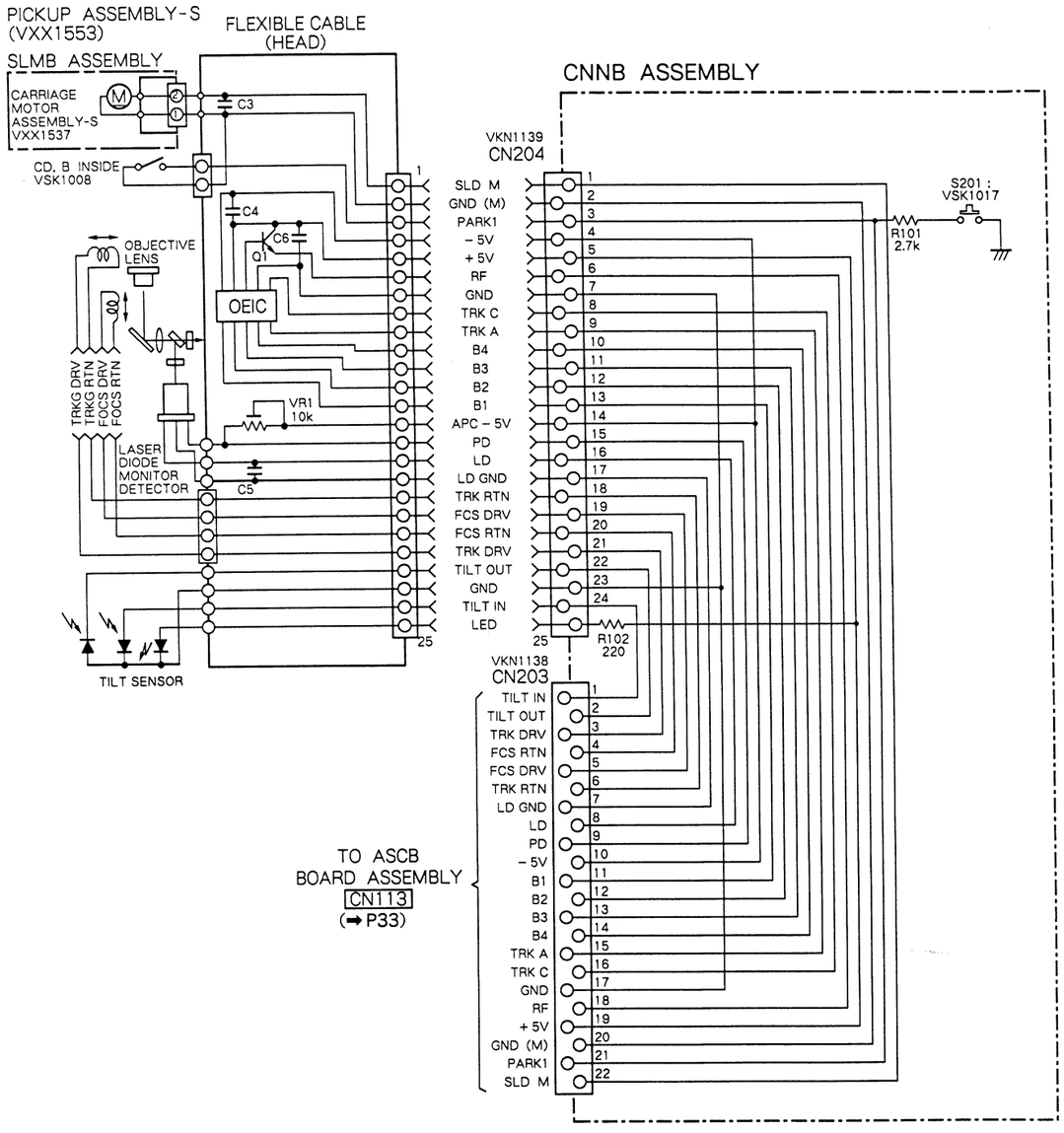


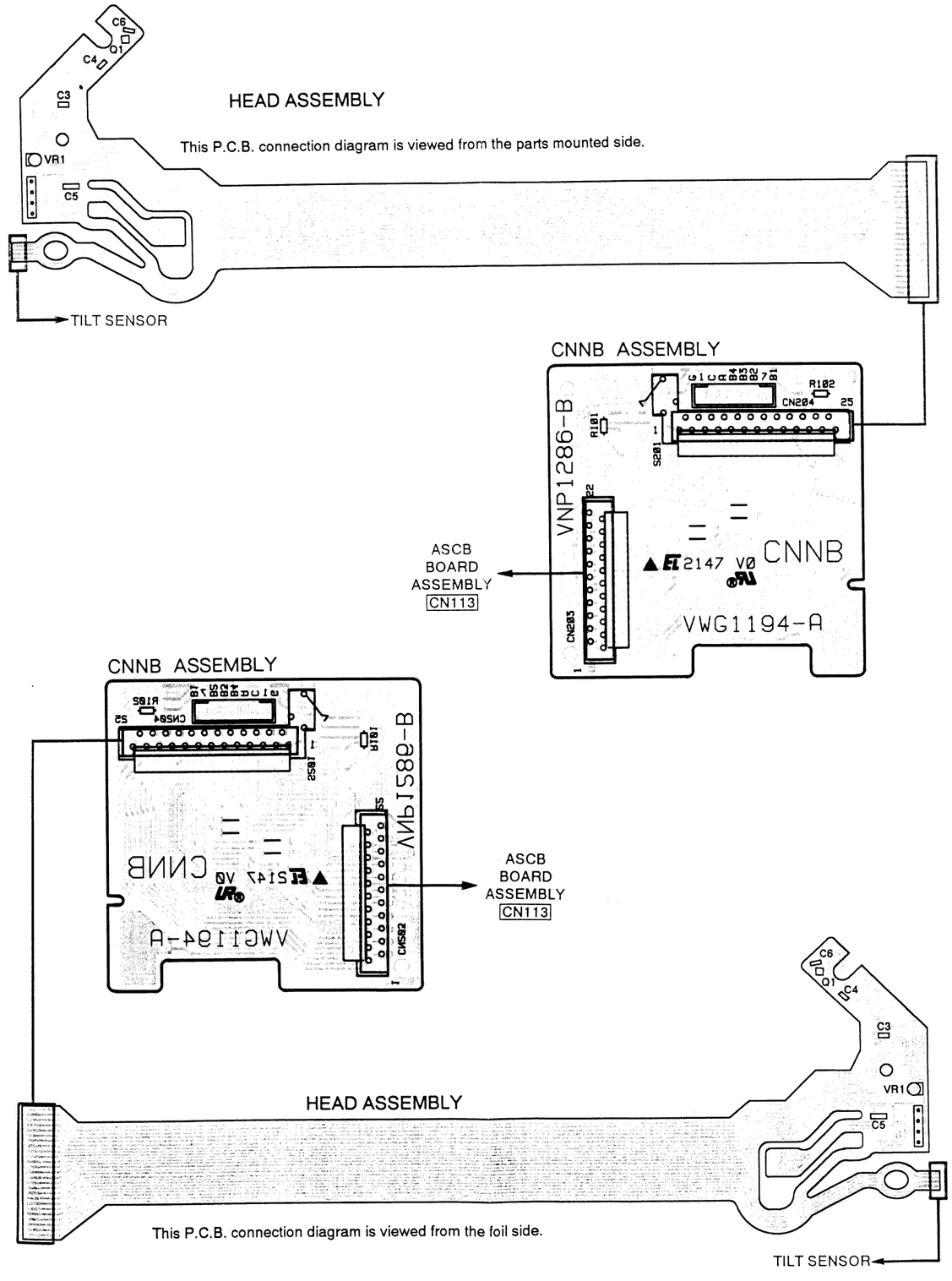
P.C.B. pattern diagram indication	Corresponding part symbol	Part name
		Transistor
		FET
		Diode
		Zenner diode
		LED
		Varactor
		Tact switch
		Inductor
		Coil
		Transformer
		Filter
		Ceramic capacitor
		Mylar capacitor
		Styrol capacitor
		Electrolytic capacitor (Non polarized)
		Electrolytic capacitor (Nolseless)
		Electrolytic capacitor (Polarized)
		Electrolytic capacitor (Polarized)
		Power capacitor
		Semi-fixed resistor
		Resistor array
		Resistor
		Resonator
		Thermistor

1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the above Table.
3. The capacitor terminal marked with ▭ shows negative terminal.
4. The diode marked with ○ shows cathode side.
5. The transistor terminal marked with ▭ shows emitter.

This P. C. B. connection diagram is viewed from the foil side.

4.3 PICKUP AND CNNB ASSEMBLIES





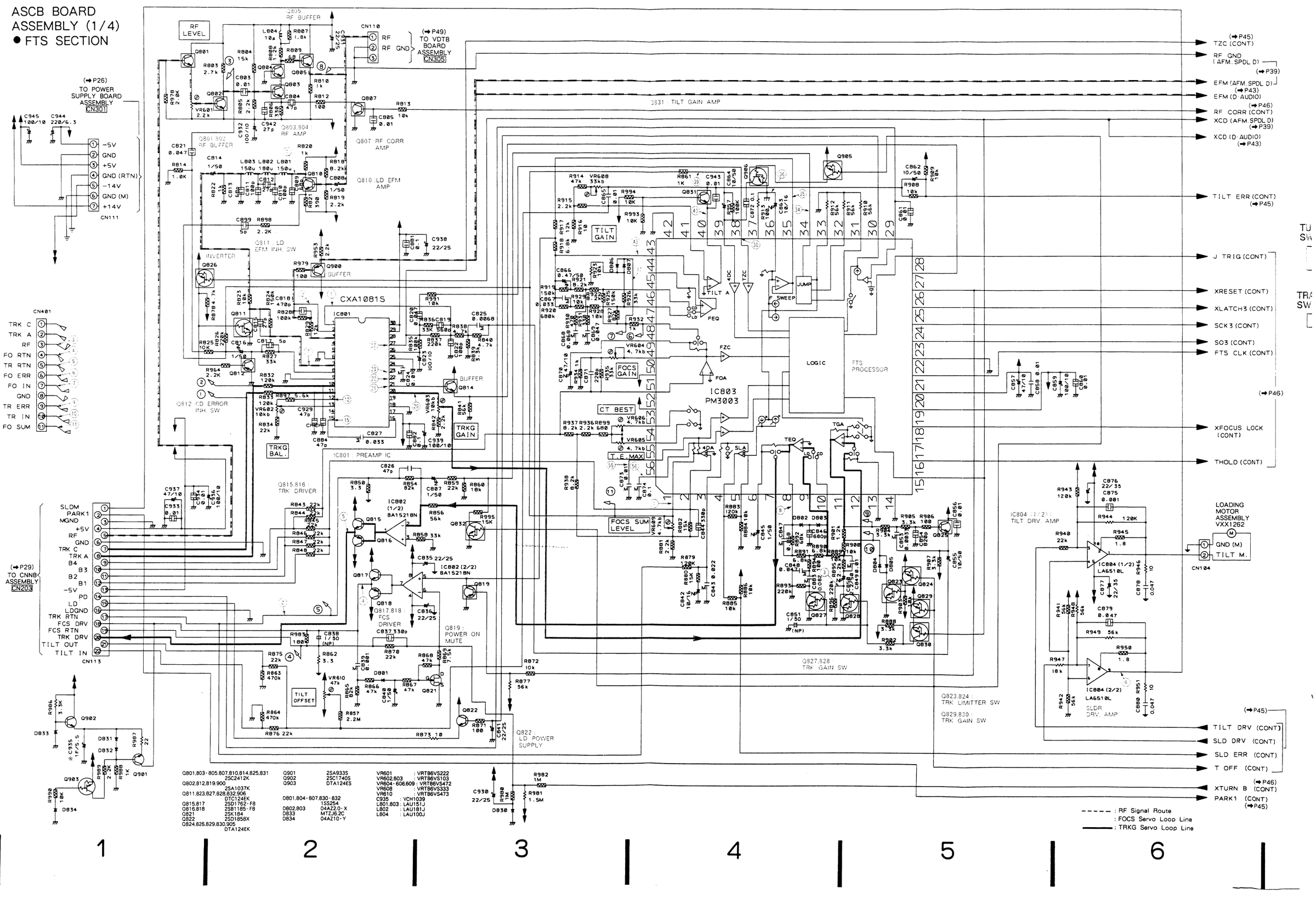
FTS SECTION

Note: (No.) in the table correspond to the pin No.

IC801 (CXA1081S)		CN401	IC803 (PM3003)		Other points
(1) 1.5Vp-p	(20) 400mVp-p	(3) 300mVp-p	(1) 300mVp-p	(39) 1Vp-p	(1) Q810 Collector 400mVp-p
(2) 1.5Vp-p	(21) 700mVp-p	(4) 5Vp-p	(8) 2Vp-p	(40) 200mVp-p	(2) CN113 Pin 17 200mVp-p
(7) 40mVp-p	(22) 10Vp-p :still	(5) 4Vp-p	(34) 500mVp-p :still	(43) 1.5Vp-p	(3) Q828 Collector 400mVp-p
(12) 200mVp-p	(23) 2Vp-p	(6) 600mVp-p	(35) 1Vp-p	(47) 150mVp-p	(4) CN113 Pin 18 15Vp-p
(15) 400mVp-p	(27) 3Vp-p	(7) 1.5Vp-p	(36) 2Vp-p	(55) 250mVp-p	(5) CN113 Pin 20 20Vp-p
		(9) 1.25Vp-p :open	(38) 2Vp-p	(56) 250mVp-p	(6) IC804 Pin 9 3Vp-p
		(10) 1.25Vp-p			
		(11) 500mVp-p			

4.4 ASCB BOARD ASSEMBLY(1/4:FTS SECTION)

ASCB BOARD ASSEMBLY (1/4)
● FTS SECTION



7 8 9 10 11 12

A B C D

CN109
4
3
2
1
CDV INSIDE
LD INSIDE

FG BOARD ASSEMBLY

SW2 BOARD ASSEMBLY
SW
VWG1213-A
SW3 SW2 SW1
J12 S103 S102 S101
CMK-54XT 94V-0

ASCB BOARD ASSEMBLY
VNZ1199-E
VWX -A

FLKY ASSEMBLY
CN410

LOADING MOTOR ASSEMBLY
CN104

CNNB ASSEMBLY
CN203

TURN SW
CN108

TRAY SW
CN107

POWER SUPPLY BOARD ASSEMBLY
CN311

VDTB BOARD ASSEMBLY
CN304

VDTB BOARD ASSEMBLY
CN305

OUT CONTROL IN

CD・DECK SYNCHRO

DIGITAL OUT OPTICAL

AUDIO OUT
1/L
2/R

VIDEO OUT

HEPB ASSEMBLY
VWV1156-A
PHONES
LEVEL

VNP1301-E
ASCB

TEST MODE

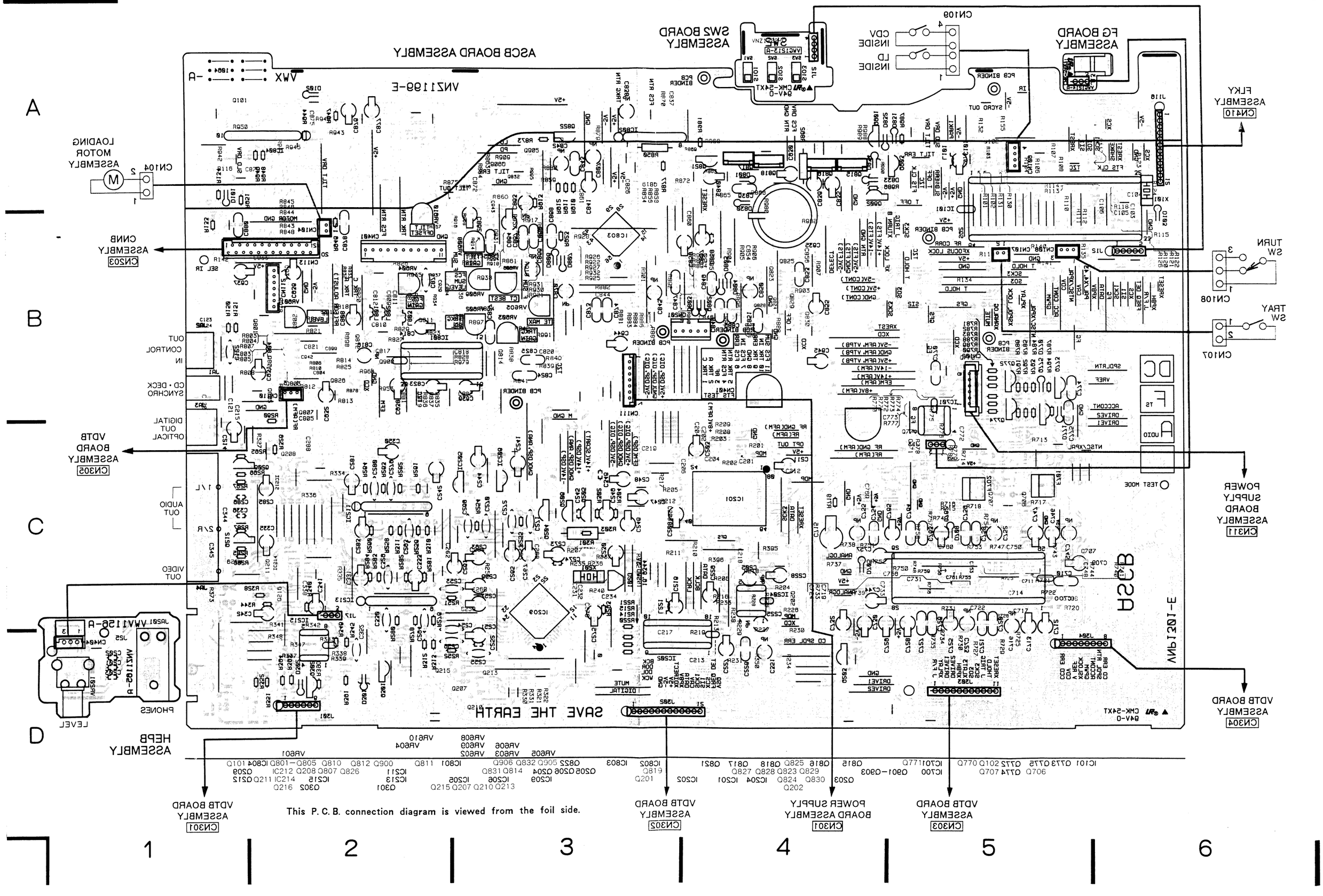
SAVE THE EARTH

VDTB BOARD ASSEMBLY
CN303

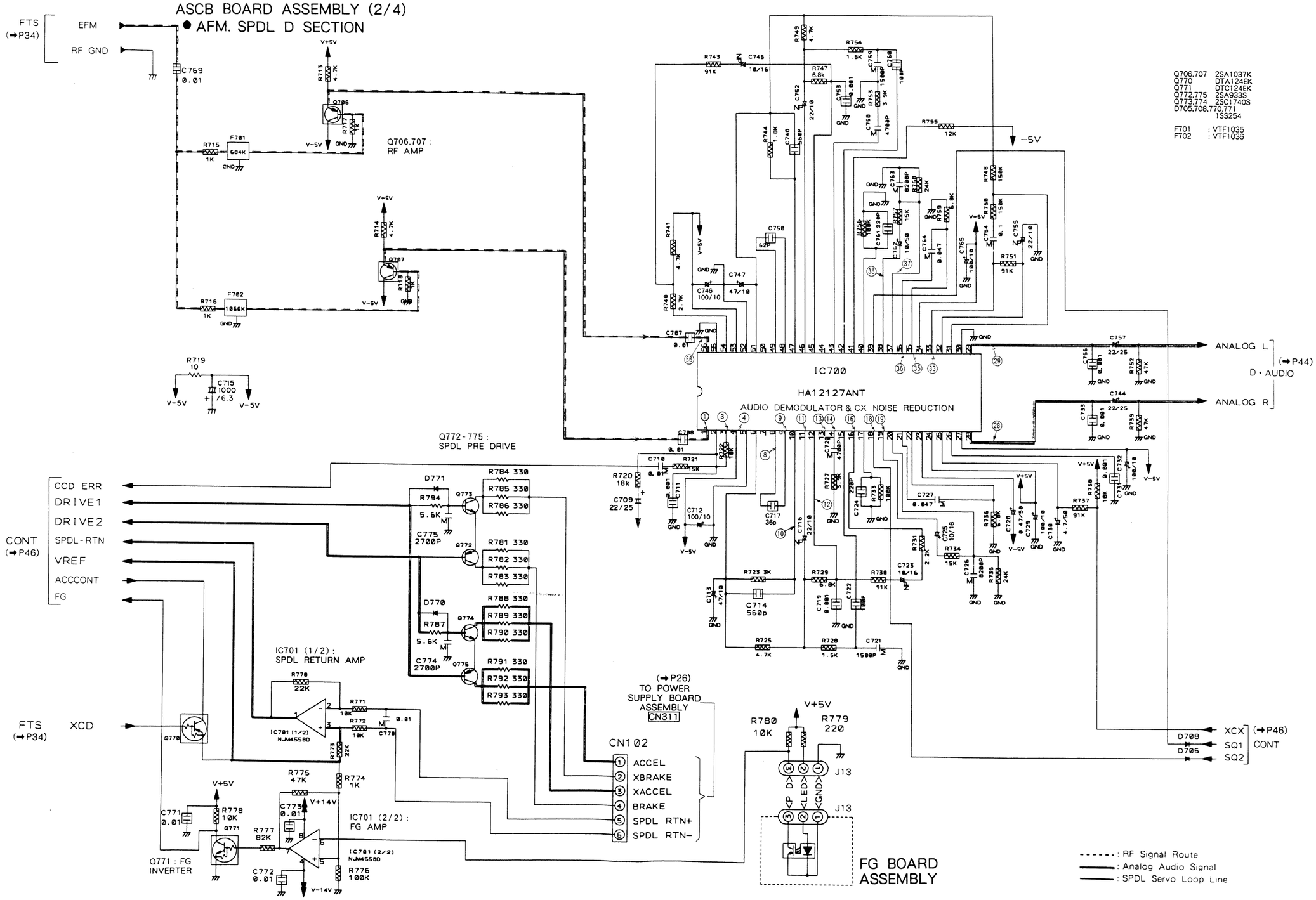
POWER SUPPLY BOARD ASSEMBLY
CN301

VDTB BOARD ASSEMBLY
CN302

VDTB BOARD ASSEMBLY
CN301

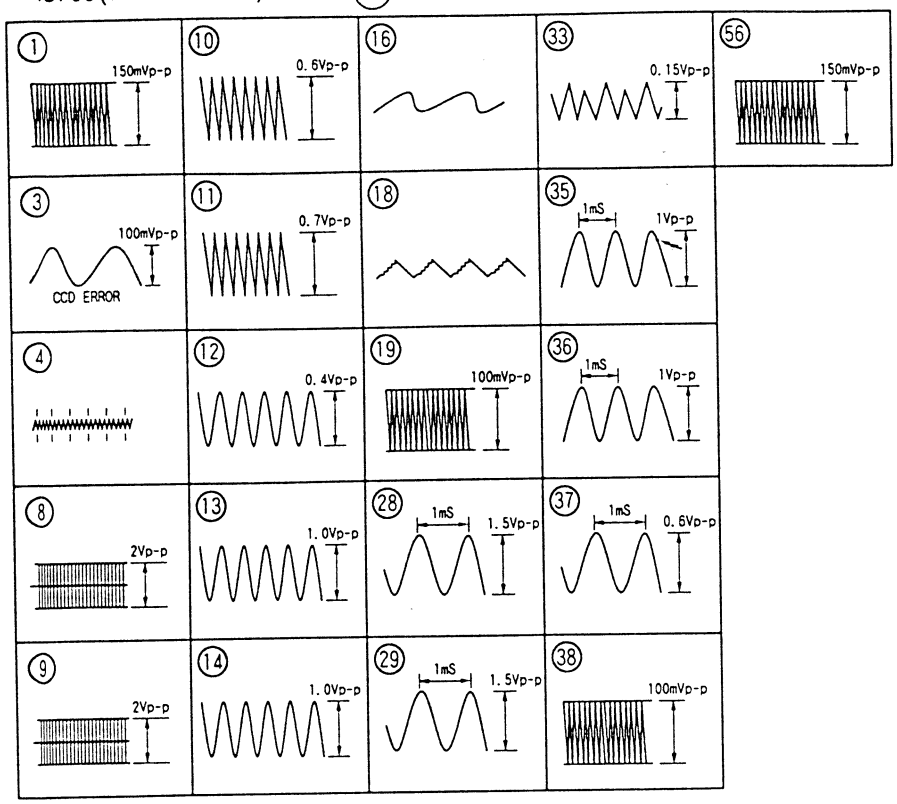

ASCB BOARD ASSEMBLY
SWS BOARD ASSEMBLY
FG BOARD ASSEMBLY
FLKY ASSEMBLY
CN410
LOADING MOTOR ASSEMBLY
CN104
CNNB ASSEMBLY
CN203
TURN SW
CN108
TRAY SW
CN107
VDTB BOARD ASSEMBLY
CN305
POWER SUPPLY BOARD ASSEMBLY
CN311
VDTB BOARD ASSEMBLY
CN304
HEPB ASSEMBLY
CN301
VDTB BOARD ASSEMBLY
CN302
POWER SUPPLY BOARD ASSEMBLY
CN301
VDTB BOARD ASSEMBLY
CN303
OUT CONTROL IN
CD · DECK SYNCHRO
DIGITAL OUT OPTICAL
AUDIO OUT
VIDEO OUT
PHONES LEVEL
SAVE THE EARTH
VNA1139-E
VNA1150-A
VNA1151-A
CMK-244XT
B4A-0
This P. C. B. connection diagram is viewed from the foil side.

4.5 ASCB BOARD(2/4:AFM. SPDL D SECTION) AND FG BOARD ASSEMBLIES



AFM. SPDL D SECTION

- IC700(HA12127ANT) Note : (No.) in the table correspond to the pin No.



D. AUDIO SECTION

Note: Waveforms and voltages are at the PLAY state.

IC201 (CXD2500AQ)

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	0	15	0	29	0	43	*	57	*	71	*
2	0	16	4.8	30	0	44	0	58	*	72	5
3	0	17	0	31	*	45	4.8	59	5	73	5
4	*	18	*	32	*	46	*	60	*	74	*
5	0	19	2.4	33	4.8	47	*	61	5	75	0
6	4.8	20	*	34	*	48	*	62	*	76	0
7	0	21	0	35	*	49	*	63	*	77	*
8	4.8	22	2.3	36	*	50	*	64	*	78	*
9	0	23	4.8	37	*	51	*	65	0	79	*
10	0	24	*	38	*	52	0	66	*	80	0
11	0	25	0	39	0	53	*	67	*		
12	0	26	0	40	4.8	54	*	68	0		
13	0	27	*	41	*	55	0	69	*		
14	0	28	0	42	*	56	*	70	5		

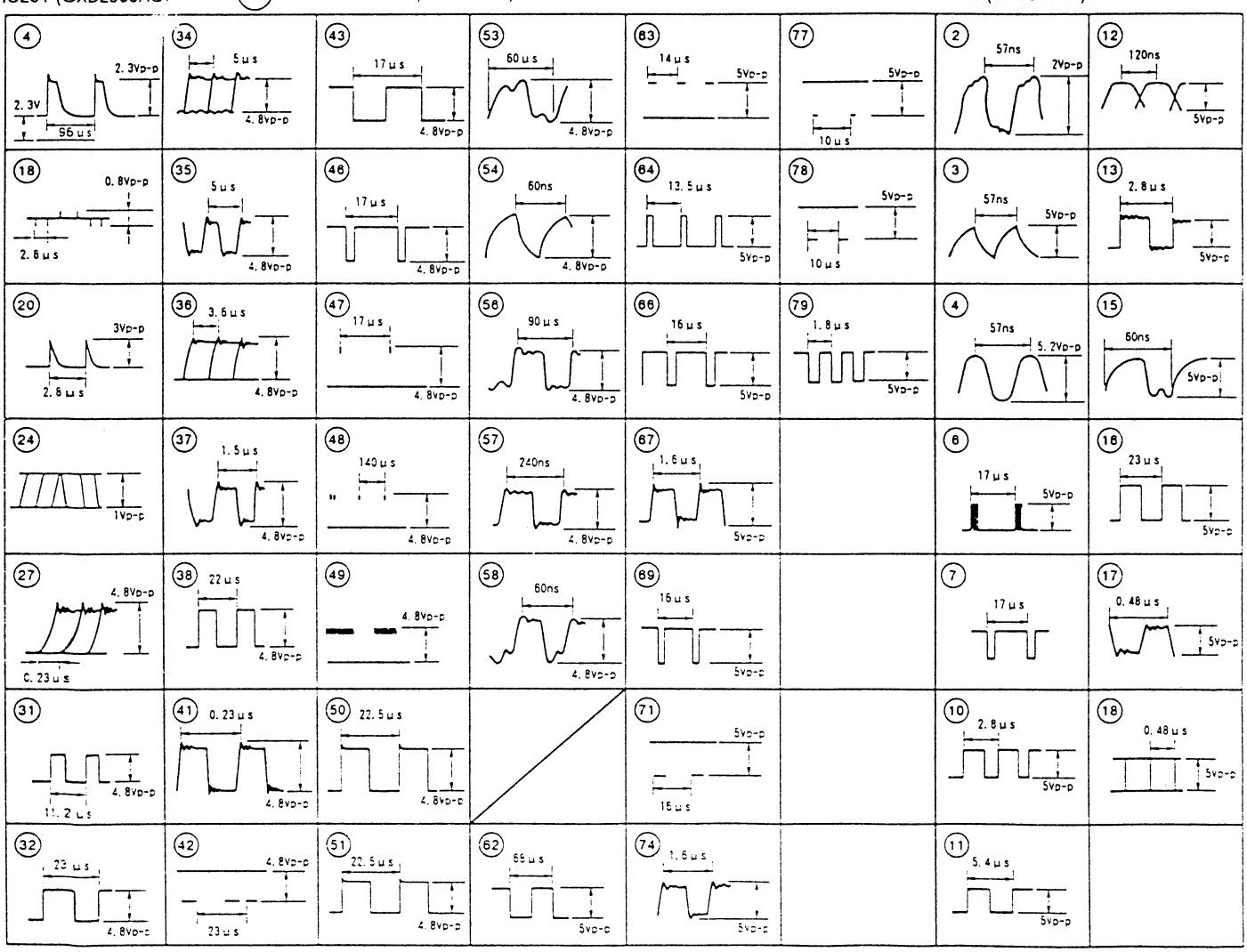
*: Refer to waveforms

IC202 (SM5840AP)

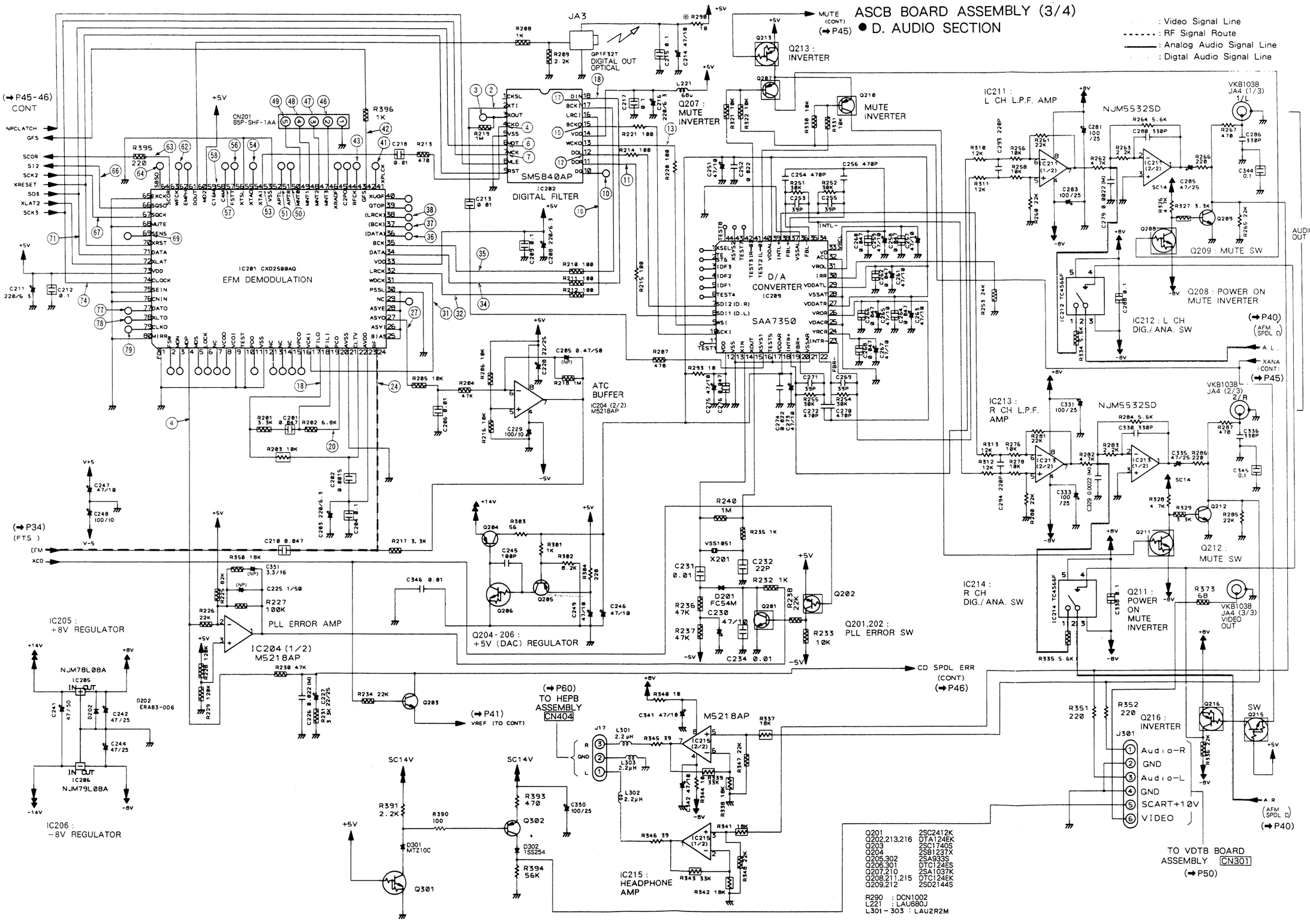
Pin No.	Voltage	Pin No.	Voltage
1	5	10	*
2	*	11	*
3	*	12	*
4	*	13	*
5	0	14	5
6	*	15	*
7	*	16	*
8	5	17	*
9	5	18	*

IC201 (CXD2500AQ) Note: (No.) in the table correspond to the pin No.

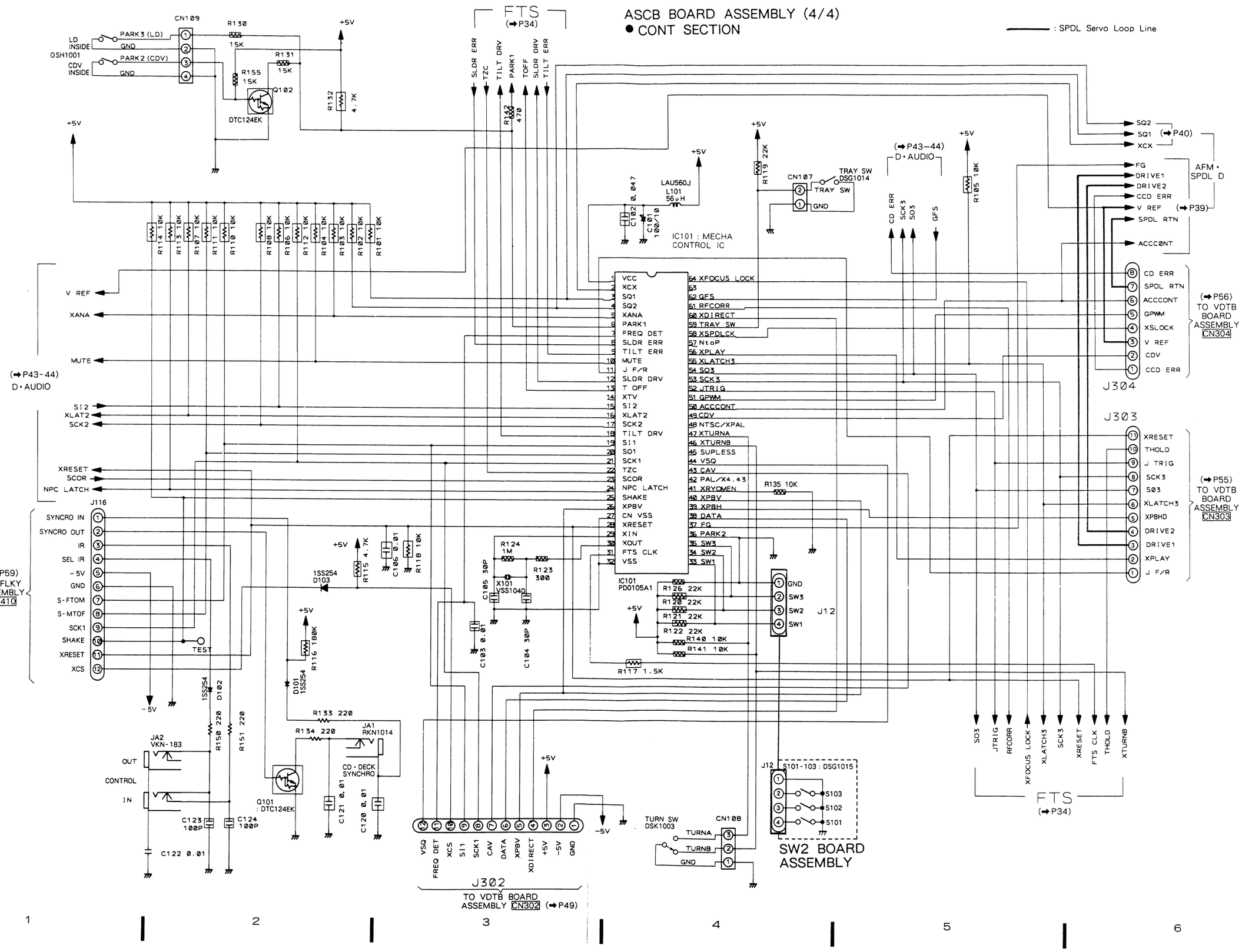
IC202 (SM5840AP)



4.6 ASCB BOARD ASSEMBLY(3/4:D. AUDIO SECTION)



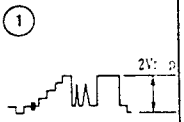
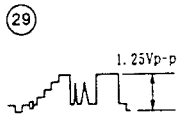
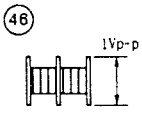
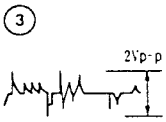
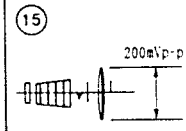
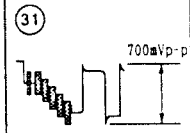
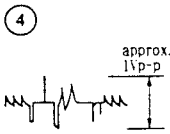
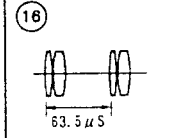
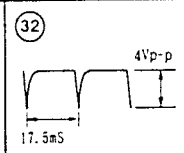
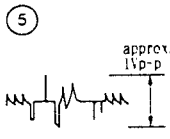
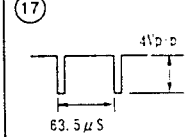
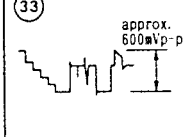
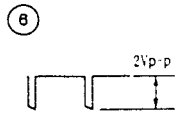
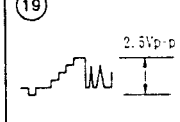
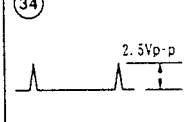
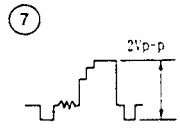
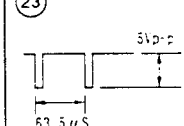
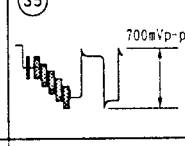
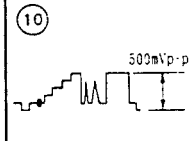
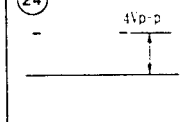
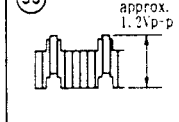
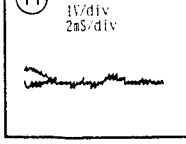
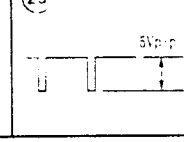
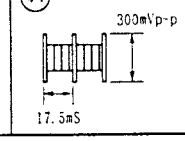
4.7 ASCB BOARD(4/4:CONT SECTION) AND SW2 BOARD ASSEMBLIES



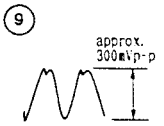
VDEM SECTION

Note: (No.) in the table correspond to the pin No.

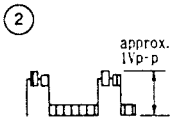
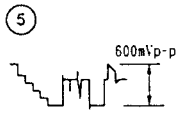
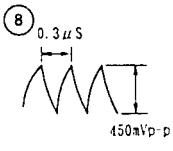
IC401 (PA5013A)

① 	⑭	㉙ 	㊻ 
③ 	⑮ 	㉛ 	
④ 	⑯ 	㉜ 	
⑤ 	⑰ 	㉝ 	
⑧ 	⑲ 	㉞ 	
⑦ 	㉓ 	㉟ 	
⑩ 	㉔ 	㊴ 	
⑪ 	㉕ 	㊹ 	

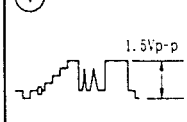
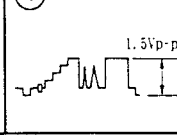
IC404 (PA0017)

⑨ 

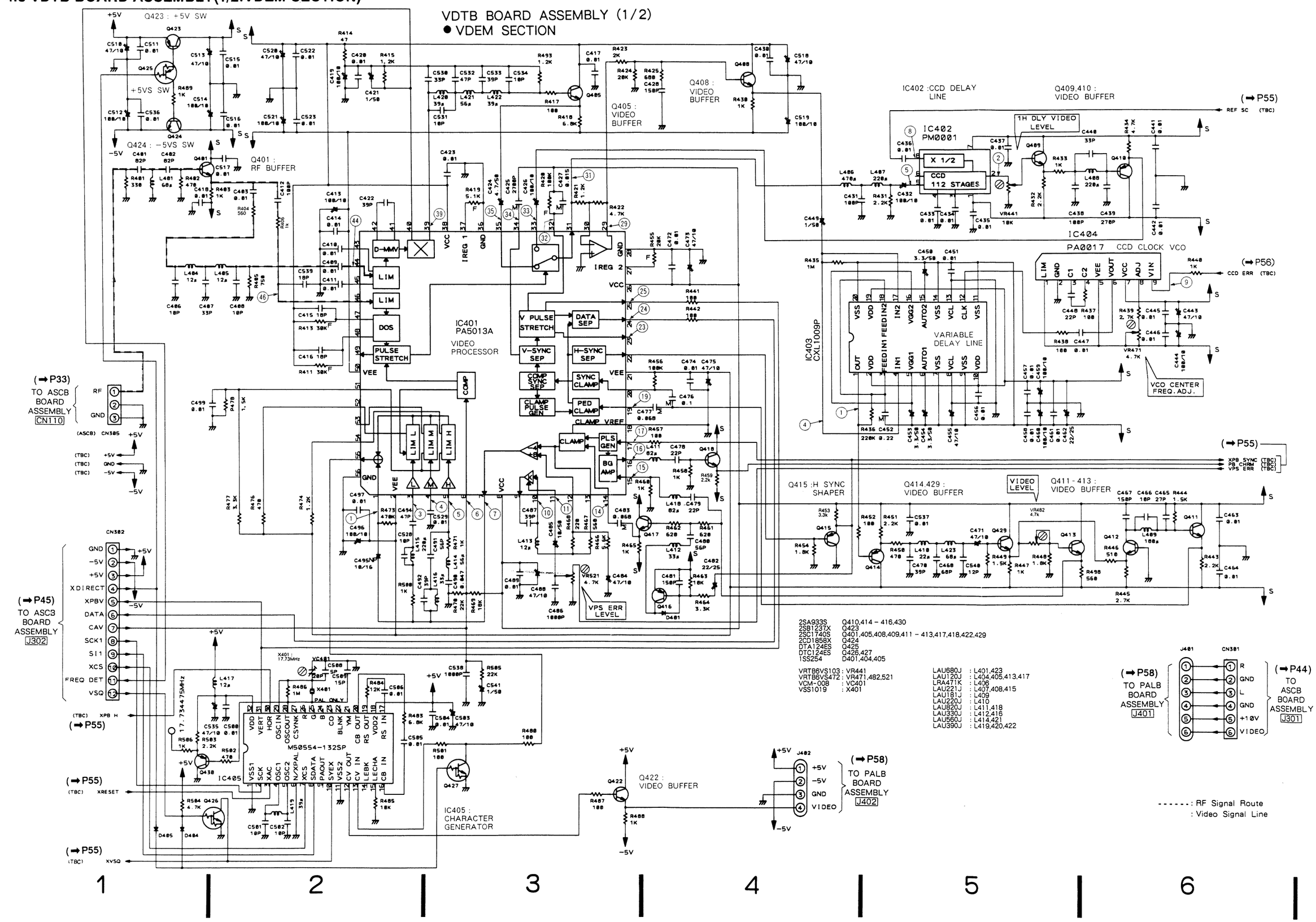
IC402 (PM0001)

② 
⑤ 
⑧ 

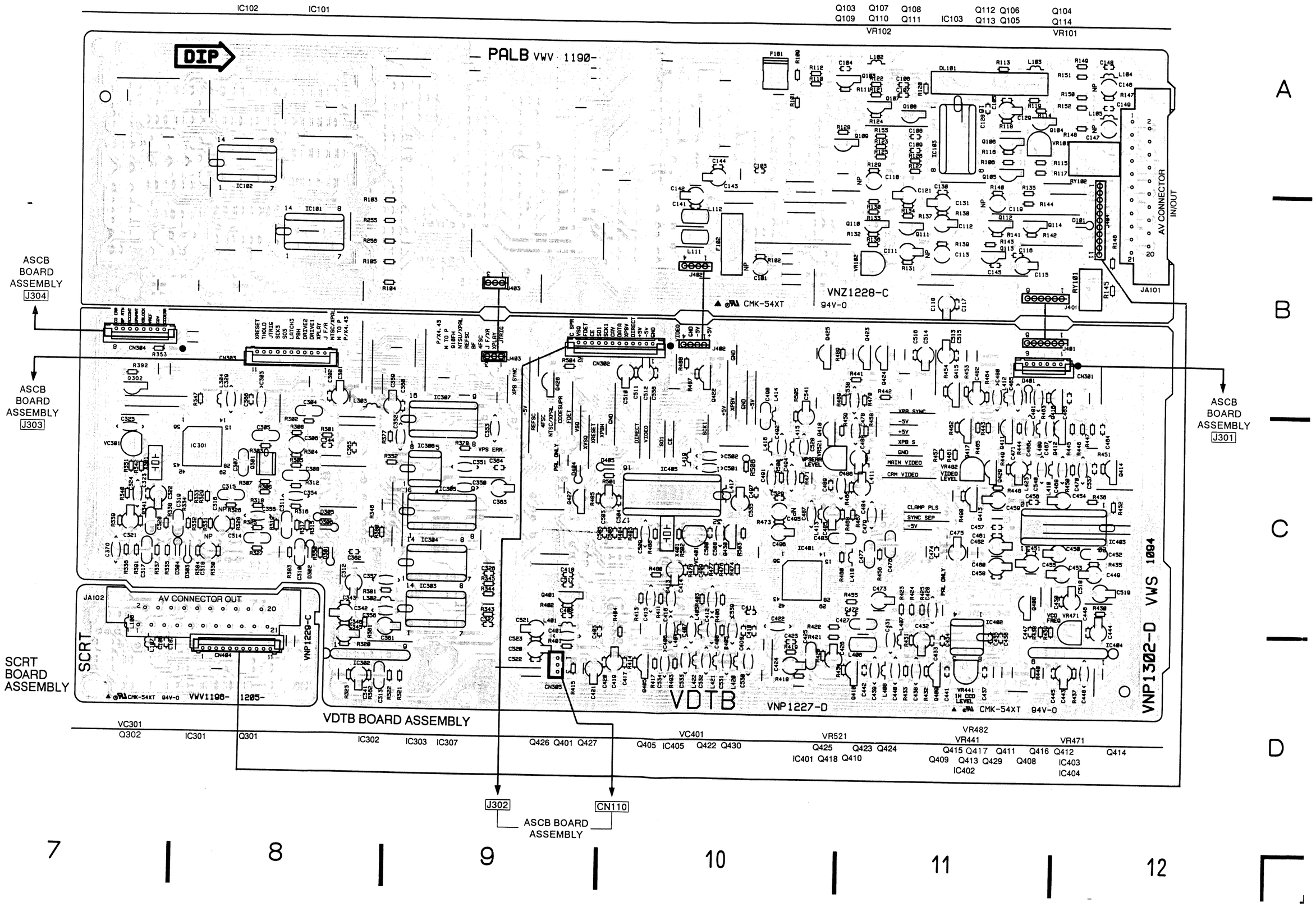
IC403(CXL1009P)

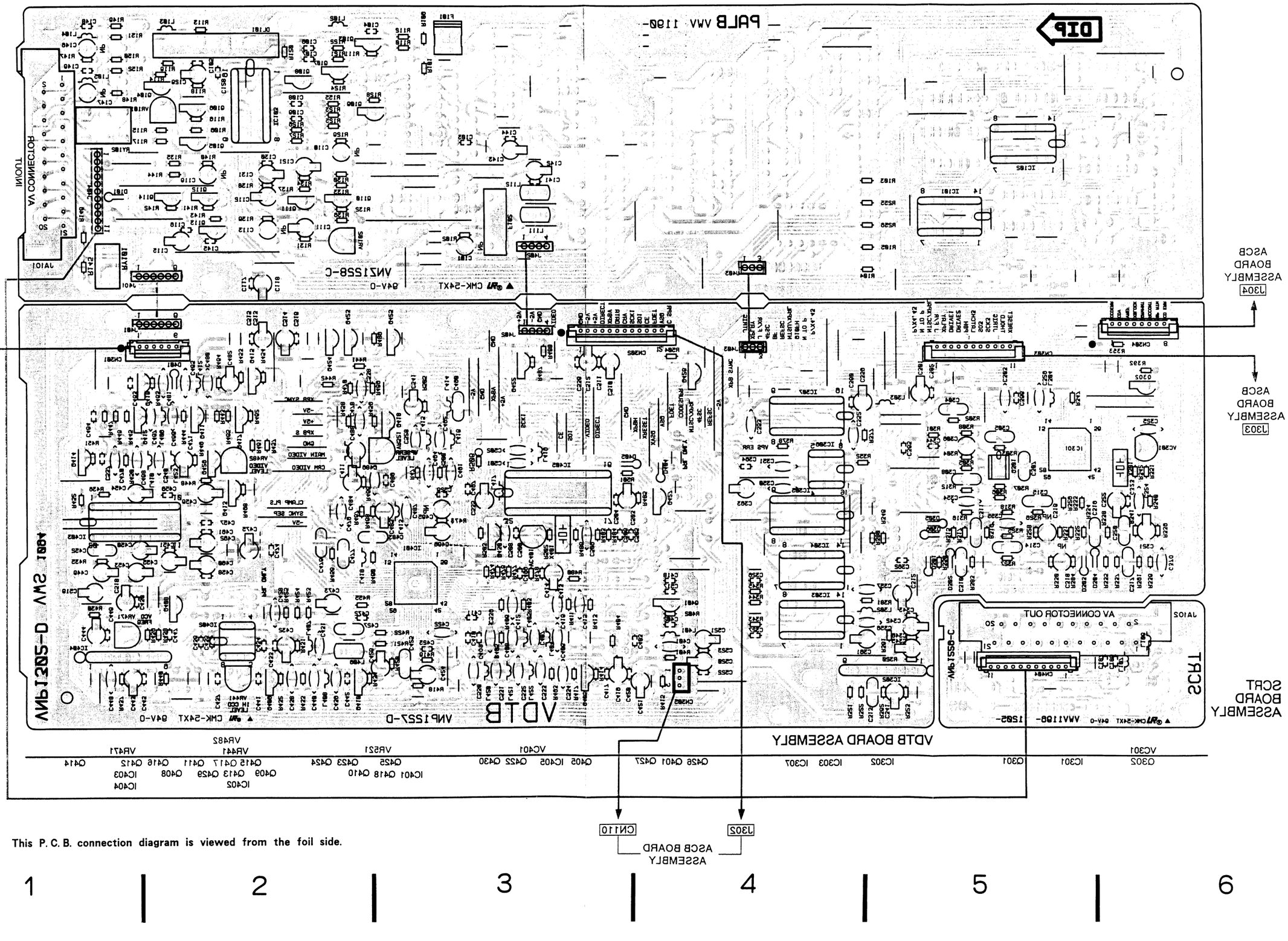
① 
④ 

4.8 VDTB BOARD ASSEMBLY(1/2:VDEM SECTION)



PALB BOARD ASSEMBLY





This P. C. B. connection diagram is viewed from the foil side.

4.9 VDTB BOARD ASSEMBLY(2/2:TBC SECTION)

VDTB BOARD ASSEMBLY (2/2)
● TBC SECTION

IC301 (PM3002) Note: Waveforms and voltages are at the PLAY state.

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	0V	11	*	21	2V	31	5V	41	——	51	*
2	0V	12	0V	22	2V	32	5V	42	2V	52	*
3	5V	13	——	23	5V	33	2.8V	43	5V	53	5V
4	0V	14	——	24	*	34	0V	44	*	54	——
5	0V	15	*	25	*	35	2.8V	45	——	55	0V
6	5V	18	0V	26	——	36	2.8V	46	5V	56	0V
7	5V	17	——	27	——	37	2.8V	47	5V		
8	——	18	5V	28	——	38	2.8V	48	0V		
9	5V	19	*	29	——	39	2V	49	——		
10	*	20	2V	30	2.5V	40	5V	50	0V		

*: Refer to Waveforms

LOGIC BLOCK
SSG
REF H GEN
REF SC GEN
PBH TIMING GEN
LOCK DETECTOR

IC301 : TBC PROCESSOR

PFC

SPINDLE DRIVE LOGIC

S-P DECORDER

IC302 1/2 : VREF. GEN.

IC302 2/2 : CCD ERR. AMP

Q301 : TRAPE GENERATOR

(➡P50) VDEM VPS ERR
(➡P50) VDEM PBCHRM
(➡P50) VDEM REFSC
(➡P49) VDEM XPBH
(➡P50) VDEM PBSYNC
(➡P50) VDEM VSQ
(➡P49) VDEM XRESET

TO PALB BOARD ASSEMBLY J403 (➡P57)
J TRIG
XPLAY
J F/XR

(➡P46) TO ASCB BOARD ASSEMBLY J304
CD ERR
SPDL RTN
ACCONT
GRWMNT
XSLOCK
V REF
CDV
CCD ERR
CN304

TO ASCB BOARD ASSEMBLY J303 (➡P46)
J F/R
XPLAY
DRIVE1
DRIVE2
PBHD
LATCH3
SO3
SCK3
JTRIG
THOLD
XRESET
CN303

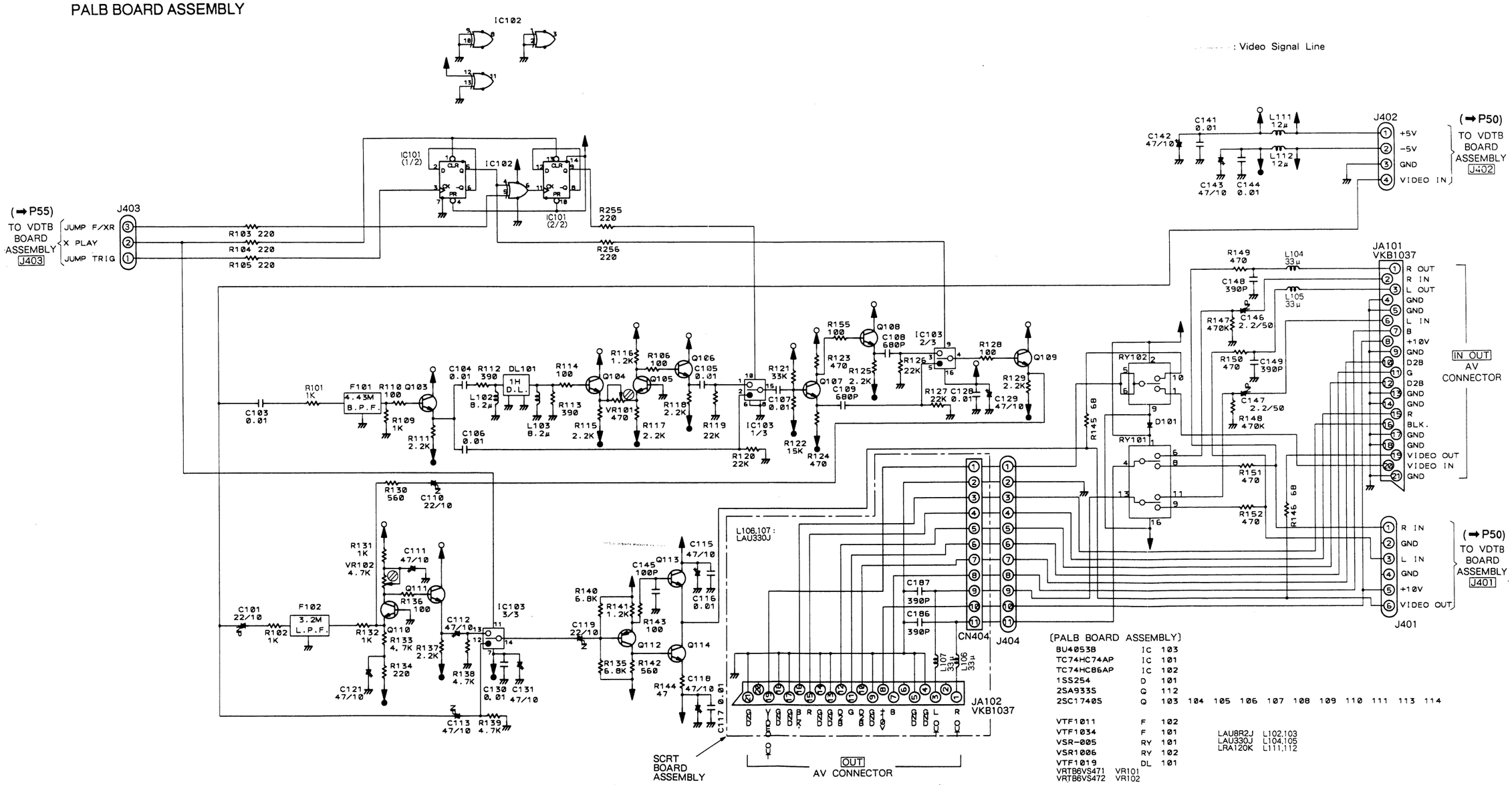
PM3002	IC 301
TC74HC123AP	IC 307
BU4053B	IC 305
BU74HCU04	IC 303
BU74HC00	IC 304
NJM082D	IC 306
NJM4558S	IC 302
DTC124ES	Q302
2SC3064	Q 301
1SS254	D 301 302 303 304 305 306

VCM-008 : VC301
LAU220J : L302
LAU470J : L303
LAU120J : L304
VSS1053 : X301

—— : SPDL Servo Loop Line

4.10 PALB AND SCRT BOARD ASSEMBLIES

PALB BOARD ASSEMBLY

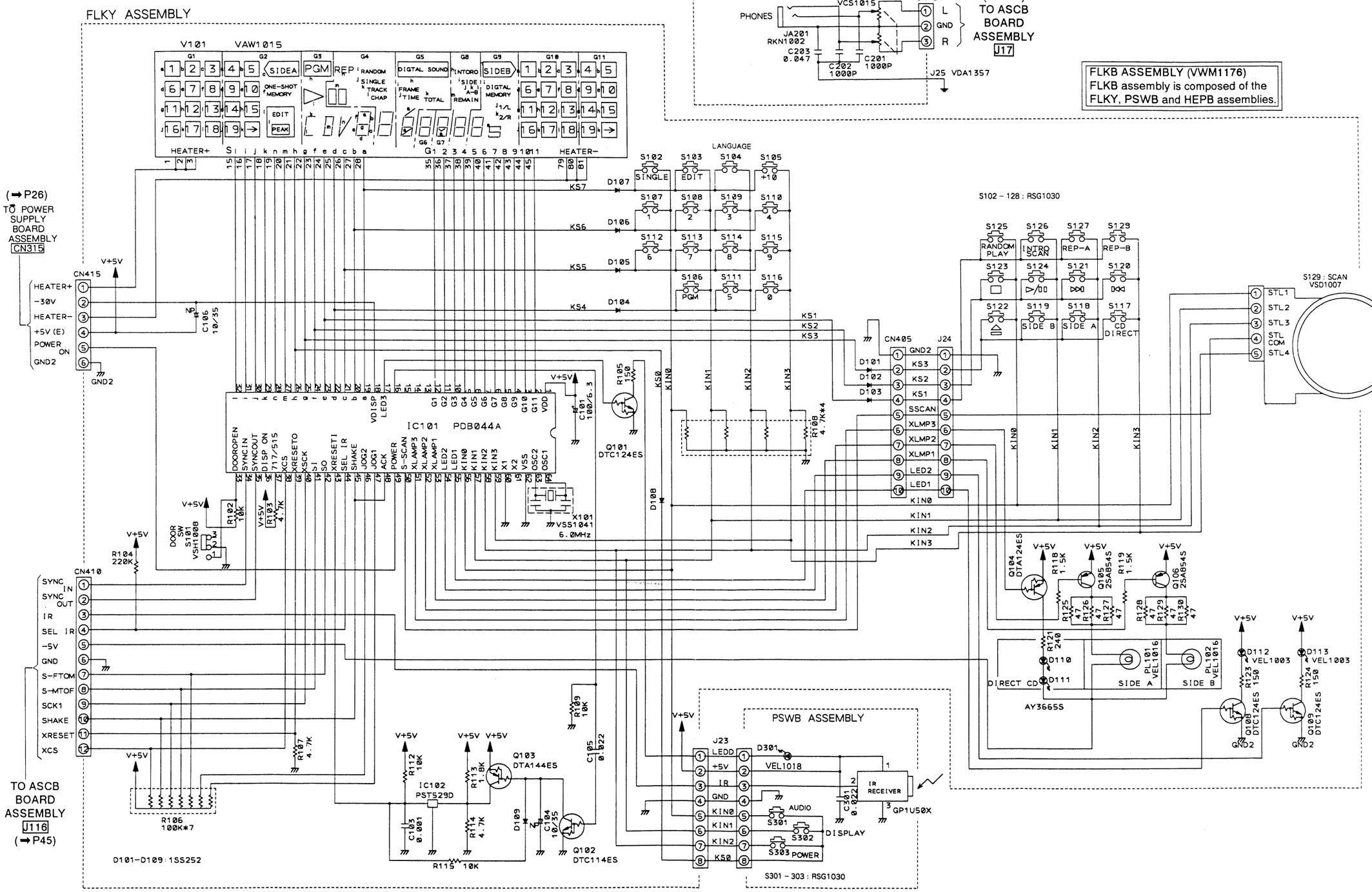


(PALB BOARD ASSEMBLY)

BU4053B	IC	103
TC74HC74AP	IC	101
TC74HC86AP	IC	102
1SS254	D	101
2SA933S	Q	112
2SC1740S	Q	103 104 105 106 107 108 109 110 111 113 114
VTF1011	F	102
VTF1034	F	101
VSR-005	RY	101
VSR1006	RY	102
VTF1019	DL	101
VRTB6VS471	VR101	
VRTB6VS472	VR102	

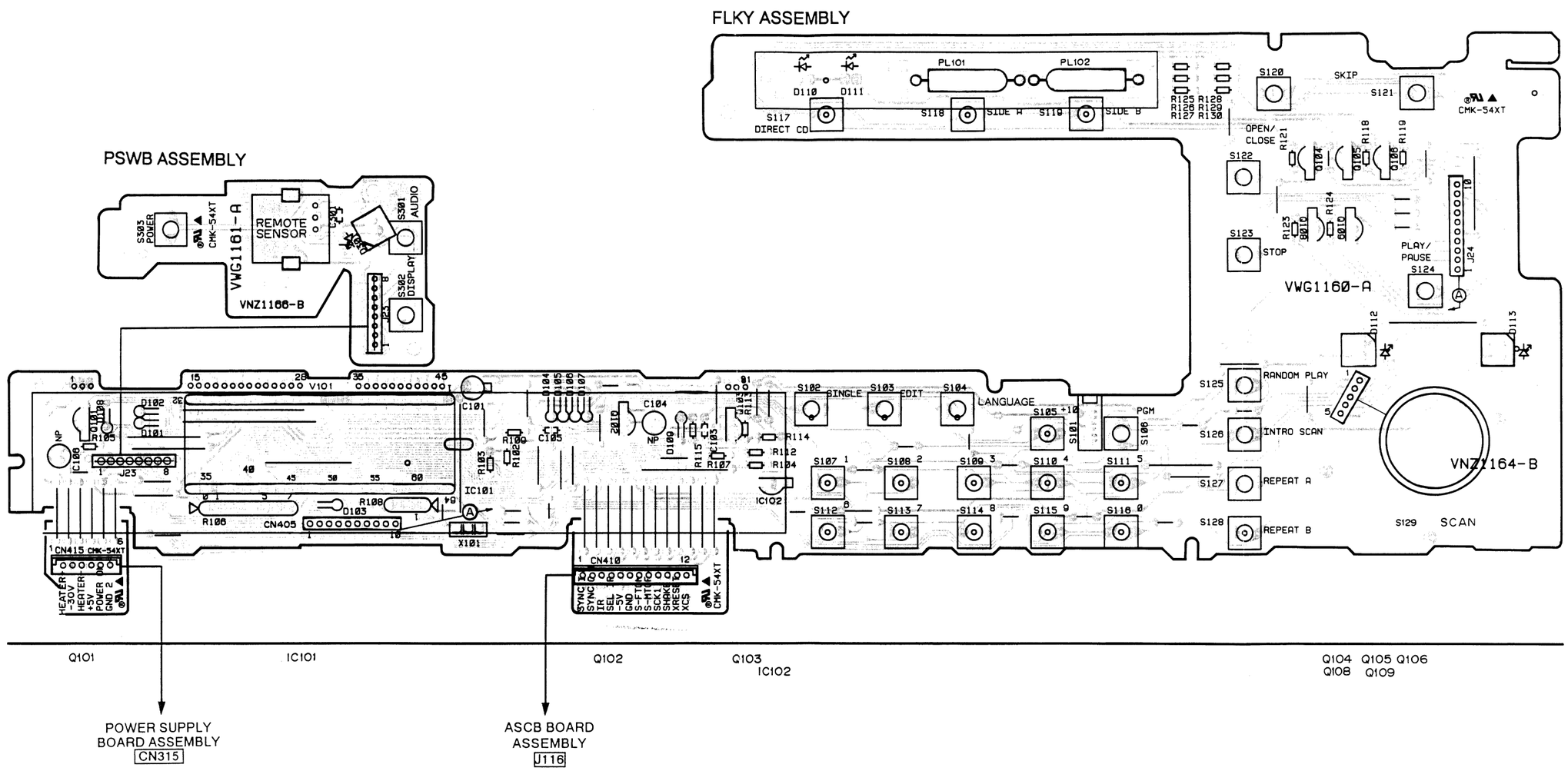
LAU8R2J L102,103
LAU330J L104,105
LRA120K L111,112

4.11 FLKY, HEPB AND PSWB ASSEMBLIES



FLKY ASSEMBLY

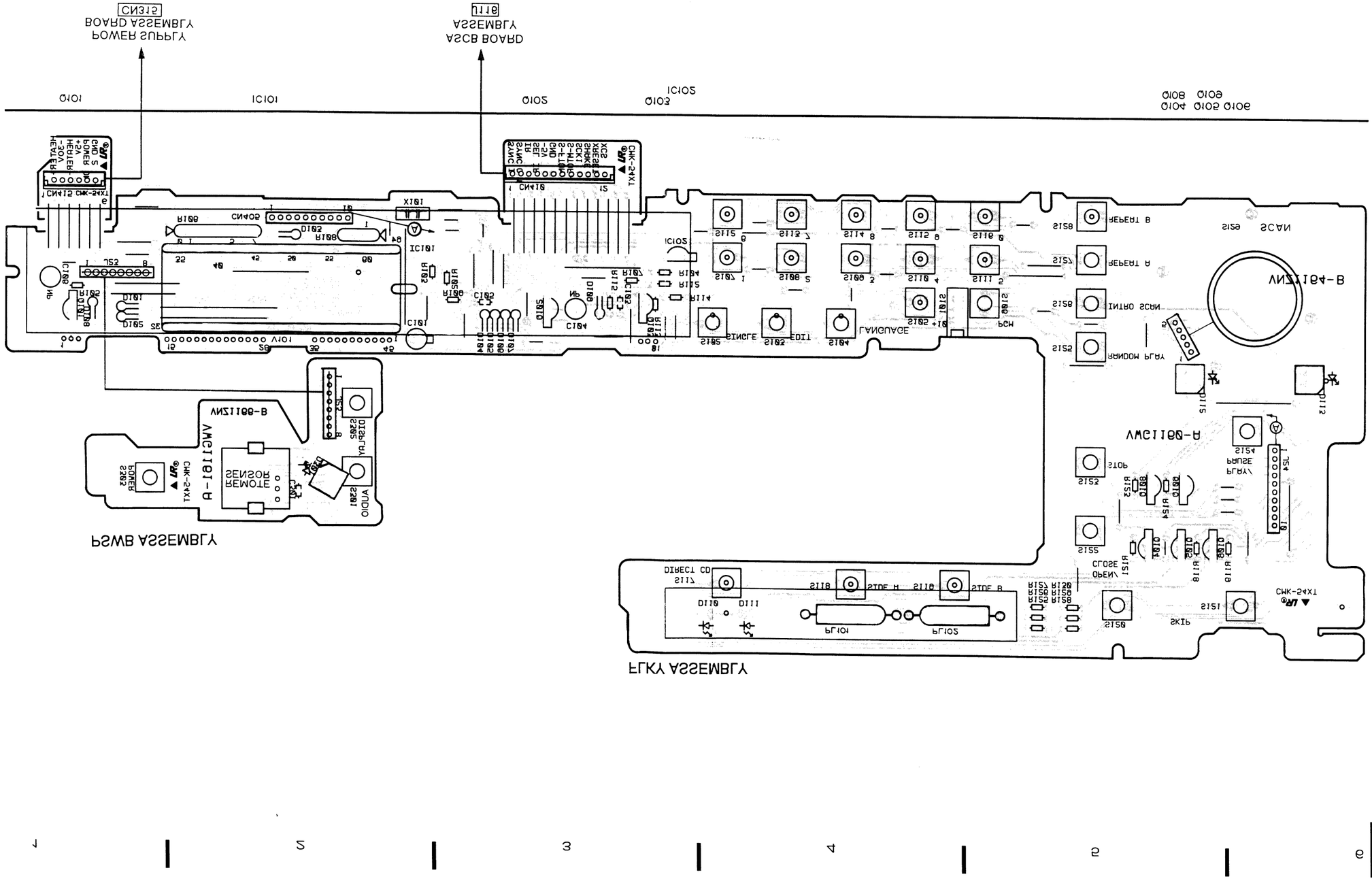
PSWB ASSEMBLY



POWER SUPPLY BOARD ASSEMBLY
CN315

ASCB BOARD ASSEMBLY
J116

This P. C. B. connection diagram is viewed from the foil side.



5. ELECTRICAL PARTS LIST

NOTES:

- *Part without part number cannot be supplied.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits(any digit apart from 0), such as 560 ohm and 47k ohm(tolerance is shown by J=5%, and K=10%).

560 Ω	*56 × 10¹*	*561*	*RD1/8PM[5][6][1]J*
47k Ω	*47 × 10³*	*473*	*RD1/4PS[4][7][3]J*
0.5 Ω	*0R5*		*RN2H[0][R][5]K*
1 Ω	*010*		*RS1P[0][1][0]K*

Ex.2 When there are 3 effective digits(such as in high precision metal film resistors).

5.62k Ω	*562 × 10¹*	*5621*	*RN1/4SR[5][6][2][1]F*

Miscellaneous Parts

Mark	Symbol & Description	Part No.
◉	MAIN board assembly ├ASCB board assembly ├FG board assembly └SW2 board assembly	VWM1165
◉	VTPB board assembly ├VDTB board assembly ├PALB board assembly └SCRT board assembly	VWM1167
◉	FLKB assembly ├FLKY assembly ├PSWB assembly └HEPB assembly	VWM1176
	HEAD assembly	
	CNNB assembly	
	Power supply board assembly	VWR1121
⚠	AC power cord	VDG1028
⚠	Strain relief	CM-22B
	Push switch (TRAY SW)	DSG1014
	Lever switch (TURN SW)	DSK1003
	Slide switch (LD, CDV, INSIDE)	OSH1001
	Slide switch (CD, B INSIDE)	VSK1008
	Spindle motor assembly	VXA1679
	Loading motor assembly	VXX1262
	Carriage motor assembly-S	VXX1537
	Pickup assembly-S	VXX1553

◉ MAIN Board Assembly (VWM1165)

MAIN board assembly is composed of the ASCB, FG and SW2 board assemblies.

ASCB Board Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC802	BA15218N
	IC801	CXA1081S
	IC201	CXD2500AQ
	IC700	HA12127ANT
	IC804	LA6510L
	IC701	NJM4558D
	IC211,IC213	NJM5532SD
	IC205	NJM78L08A
	IC206	NJM79L08A
	IC101	PD0105A1
	IC803	PM3003
	IC209	SAA7350
	IC202	SM5840AP
	IC212,IC214	TC4S66F
	IC204,IC215	M5218AP
	Q202,Q213,Q216,Q770,Q824,Q826, Q829,Q830,Q905	DTA124EK
	Q903	DTA124ES
	Q101,Q102,Q208,Q211,Q215,Q771, Q811,Q823,Q827,Q828,Q832,Q906	DTC124EK
	Q206,Q301	DTC124ES
	Q207,Q210,Q706,Q707,Q802,Q812, Q819,Q900	2SA1037K
	Q205,Q302,Q772,Q775,Q901	2SA933S
	Q816,Q818	2SB1185
	Q204	2SB1237X
	Q203,Q773,Q774,Q902	2SC1740S
	Q201,Q801,Q803-Q805,Q807,Q810, Q814,Q825,Q831	2SC2412K
	Q815,Q817	2SD1762

Mark	Symbol & Description	Part No.
	Q822	2SD1858X
	Q209,Q212	2SD2144S
	Q821	2SK184
	D201	FC54M
	D833	MTZJ6.2C
	D301	MTZ10C
	D802,D803	04AZ2.0-X
	D834	04AZ10-Y
	D101-D103,D302,D705,D708,D770, D771,D801,D804-D807,D830,D831, D832	1SS254
	D202	ERA83-006

COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L804	LAU100J
	L801,L803	LAU151J
	L802	LAU181J
	L101	LAU560J
	L221	LAU680J
	L301-L303	LAU2R2M
	F701 B.P.F.(684kHz)	VTF1035
	F702 B.P.F.(1066kHz)	VTF1036

CAPACITORS

Mark	Symbol & Description	Part No.
	C293,C294	CCCCH221J50
	C253,C255,C269,C271	CCCCH390J50
	C871	CCCSL221J50
	C280,C330	CCCSL331J50
	C254,C256,C270,C272	CCCSL471J50
	C817,C899	CCSQCH050C50
	C123,C124,C722,C760,C810,C811, C822	CCSQCH101J50
	C232	CCSQCH220J50
	C724,C761	CCSQCH221J50
	C812,C815,C942	CCSQCH270J50
	C104,C105	CCSQCH300J50
	C71[illegible]	CCSQCH360J50
	C804,C826,C884,C929	CCSQCH470J50
	C750	CCSQCH620J50
	C809,C813	CCSQCH680J50
	C837,C844	CCSQSL331J50
	C818	CCSQSL471J50
	C714,C748,C819	CCSQSL561J50
	C846	CCSQSL681J50
	C876,C877	CEAL220M35
	C838	CEALNP010M50
	C205,C866	CEANPR47M50
	C225,C807,C816,C845,C851	CEANP010M50
	C745,C842,C863	CEANP100M16
	C850	CEANP2R2M50
	C716,C752,C755	CEANP220M10
	C351	CEANP3R3M16
	C870	CEANP470M10
	C728	CEASR47M50
	C808,C814,C840	CEAS010M50
	C762,C855,C862,C864	CEAS100M50
	C876,C877	CEAL220M35
	C101,C229,C248,C712,C729,C732, C746,C765,C823,C859,C932,C936, C939,C945	CEAS101M10
	C281,C283,C331,C333,C350	CEAS101M25
	C227,C228,C709,C744,C757,C835, C836,C841,C930,C931,C938	CEAS220M25
	C241	CEAS470M50
	C715	CEAS102M6R3
	C203,C208,C211,C216,C944	CEAS221M6R3
	C730	CEAS4R7M50
	C214,C230,C246,C247,C249,C251, C257,C259,C261,C263,C265,C267, C273,C275,C341,C342,C713,C747, C857,C937	CEAS470M10
	C242,C244,C285,C335	CEAS470M25
	C723	CEJANP100M16
	C725	CEJA100M16
	C710,C824,C849,C865,C873	CFTXA103J50
	C754,C874	CFTXA104J50
	C883	CFTXA823J50
	C226,C843	CFTXA223J50
	C827,C867	CFTXA333J50
	C727,C764,C848,C869,C878,C880	CFTXA473J50
	C847,C868	CFTXA683J50
	C721,C759	CFTXA152J50
	C720,C758	CFTXA472J50
	C726,C763	CFTXA822J50
	C352	CGCYX473M25
	C122	CKCYF103Z50
	C245	CKPUYB101K50
	C286,C336	CKPUYB331K50
	C252,C274	CKPUYF223Z25
	C346,C858	CKPUYY103N16
	C711,C719,C731,C733,C753,C756, C875	CKSQYB102K50
	C202	CKSQYB152K50
	C854	CKSQYB821K50
	C103,C106,C120,C121,C206,C213, C218,C231,C234,C707,C708,C769, C771-C773,C803,C805,C856,C860, C861,C933,C934,C943	CKSQYF103Z50
	C204,C209,C212,C215,C217,C288, C338,C344,C345,C872,C881,C882	CKSQYF104Z25
	C102,C201,C210,C258,C260,C262, C264,C266,C268,C276,C820,C821, C879	CKSQYF473Z25
	C839	CQMA102J50
	C770	CQMA103J50
	C279,C329	CQMA222J50
	C774,C775	CQMA272J50
	C853	CQMA332J50
	C825	CQMA682J50
	C935 (1F/5.5V)	VCH1039

RESISTORS

Mark	Symbol & Description	Part No.
	VR602,VR603 Semi-fixed (10kΩ)	VRTB6VS103
	VR601 Semi-fixed (2.2kΩ)	VRTB6VS222
	VR608 Semi-fixed (33kΩ)	VRTB6VS333
	VR604-VR606,VR609 Semi-fixed (4.7kΩ)	VRTB6VS472
	VR610 Semi-fixed (47kΩ)	VRTB6VS473
	R290 Fusible (10Ω)	DCN1002
	R850,R862	RS1LMF3R3J
	R303	RS2LMF560J
	R133,R134,R150,R151,R214,R215, R220,R221,R251,R252,R254-R256, R258,R260-R267,R276,R278, R280-R287,R293,R301,R302,R304, R310-R313,R326,R328,R340, R344-R346,R351,R352,R390,R391, R393,R394,R719,R781-R794,R873, R877,R910-R913,R923,R944, R946-R949,R951,R981,R986,R987	RD1/6PM□□□J
	Other resistors	RS1/10S□□□J

OTHERS

Mark	Symbol & Description	Part No.
	X101 Ceramic resonator (9.00MHz)	VSS1040
	X201 Crystal resonator (16MHz)	VSS1051
	CN201 5P top post	B5P-SHF-1AA
	CN113 22P top connector	VKN1137
	JA3 Optical digital module (DIGITAL OUT OPTICAL)	GP1F32T
	JA1 Mini jack (CD•DECK SYNCHRO)	RKN1014
	JA4 3P pin jack (VIDEO OUT, AUDIO OUT (L, R))	VKB1038
	JA2 2P mini jack (CONTROL (IN, OUT))	VKN-183

FG Board Assembly

OTHER

Mark	Symbol & Description	Part No.
	Photo interrupter	GP1S51

SW2 Board Assembly

SWITCHES

Mark	Symbol & Description	Part No.
	S101-S103 Push switch (LOADING/TILT)	DSG1015

◉ VTPB Board Assembly (VWM1167)

VTPB board assembly is composed of the VDTB, PALB and SCRT board assemblies.

VDTB Board Assembly

SEMICONDCTORS

Mark	Symbol & Description	Part No.
	IC305	BU4053B
	IC303	BU74HCU04
	IC304	BU74HC00
	IC403	CXL1009P
	IC405	M50554-132SP
	IC306	NJM082D
	IC302	NJM4558S
	IC404	PA0017
	IC401	PA5013A
	IC402	PM0001
	IC301	PM3002
	IC307	TC74HC123AP
	Q425	DTA124ES
	Q302,Q426,Q427	DTC124ES
	Q410,Q414-Q416,Q430	2SA933S
	Q423	2SB1237X
	Q401,Q405,Q408,Q409,Q411-Q413, Q417,Q418,Q422,Q429	2SC1740S
	Q301	2SC3064
	Q424	2SD1858X
	D301-D306,D401,D404,D405	1SS254

COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L304,L404,L405,L413,L417	LAU120J
	L409	LAU181J
	L302,L410	LAU220J
	L407,L408,L415	LAU221J
	L412,L416	LAU330J
	L419,L420,L422	LAU390J
	L303	LAU470J
	L414,L421	LAU560J
	L401,L423	LAU680J
	L411,L418	LAU820J
	L406	LRA471K

CAPACITORS

Mark	Symbol & Description	Part No.
	VC301,VC401 Ceramic trimmer (20p)	VCM-008
	C508	CCCCH050C50
	C303,C352,C353,C412,C431,C438	CCCCH101J50
	C540	CCCCH120J50
	C329,C356,C357	CCCCH121J50
	C509	CCCCH150J50
	C428,C467,C481	CCCCH151J50
	C539	CCCCH180J50
	C448,C478,C479	CCCCH220J50
	C324,C465	CCCCH270J50
	C407,C440,C530	CCCCH330J50
	C422,C470,C487,C492,C533	CCCCH390J50
	C494,C532	CCCCH470J50
	C480,C491	CCCCH560J50
	C468	CCCCH680J50
	C354,C401,C402	CCCCH820J50
	C350	CCCSL221J50
	C439	CCCSL271J50
	C325,C406,C408,C466,C501,C502, C528,C531,C534	CCPUCH100J50
	C355,C415,C416	CCPUCH180J50
	C495	CEANP100M16
	C316	CEANP2R2M50
	C318	CEANP220M10
	C421,C449,C541	CEAS010M50
	C485	CEAS100M50
	C345,C363,C413,C419,C426,C432, C444,C459,C460,C496,C512,C514, C519,C521	CEAS101M10
	C312,C462,C482	CEAS220M25
	C301	CEAS221M6R3
	C450,C453,C454	CEAS3R3M50
	C321,C424	CEAS4R7M50
	C322,C341,C342,C359,C361,C443, C455,C471,C473,C475,C484,C488, C503,C510,C513,C518,C520,C535	CEAS470M10
	C314	CFTXA103J50
	C476	CFTXA104J50
	C427	CFTXA153J50
	C317	CFTXA223J50
	C304,C452	CTFNA224J50
	C490	CFTXA473J50
	C310,C315	CFTXA563J50
	C477,C483	CFTXA683J50
	C351,C486,C538	CKCYB102K50
	C370	CKPUYB331K50
	C302,C323,C326,C327,C343,C344, C346,C360,C362,C364-C366,C403, C409-C411,C414,C417,C418,C420, C423,C430,C433-C437,C441,C442, C445 C447,C451,C456-C458, C461,C463,C464,C472,C474,C489, C497,C499,C500,C504-C506,C511, C515-C517,C522,C523,C529,C536, C537	CKPUYY103N16
	C305,C307	CQMA102J50
	C308	CQMA152J50
	C320	CQMA222J50
	C311,C425	CQMA272J50
	C313,C319	CQMA332J50
	C306	CQPA821J100

RESISTORS

Mark	Symbol & Description	Part No.
	VR471,VR482,VR521 Semi-fixed (4.7kΩ)	VRTB6VS472
	VR441 Semi-fixed (10kΩ)	VRTB6VS103
	R411,R413,R419,R420,R455	RN1/6PQ□□□□F
	Other resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	X401 Crystal resonator (17.734MHz)	VSS1019
	X301 Crystal resonator (14.22MHz)	VSS1053

PALB Board Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC103	BU4053B
	IC101	TC74HC74AP
	IC102	TC74HC86AP
	Q112	2SA933S
	Q103-Q111,Q113,Q114	2SC1740S
	D101	1SS254

RELAYS

Mark	Symbol & Description	Part No.
	RY101 Relay	VSR-005
	RY102 Relay	VSR1006

COILS AND FILTERS

Mark	Symbol & Description	Part No.
	L104,L105	LAU330J
	L102,L103	LAU8R2J
	L111,L112	LRA120K
	F102 L.P.F. (3.2MHz)	VTF1011
	F101 B.P.F. (4.43MHz)	VTF1034

CAPACITORS

Mark	Symbol & Description	Part No.
	C146,C147	CEANP2R2M50
	C101,C110,C119	CEANP220M10
	C113	CEANP470M10
	C111,C112,C115,C118,C121,C129, C131,C142,C143	CEAS470M10

Mark	Symbol & Description	Part No.
	C145	CKPUYB101K50
	C148,C149	CKPUYB391K50
	C108,C109	CKPUYB681K50
	C103-C107,C116,C117,C128,C130, C141,C144	CKPUYY103N16

RESISTORS

Mark	Symbol & Description	Part No.
	VR101 Semi-fixed (470Ω)	VRTB6VS471
	VR102 Semi-fixed (4.7kΩ)	VRTB6VS472
	Other resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	JA101 RGB connector (AV connector)(IN/OUT)	VKB1037
	DL101 64 μ sec delay line	VTF1019

SCRT Board Assembly

COILS

Mark	Symbol & Description	Part No.
	L106,L107	LAU330J

CAPACITORS

Mark	Symbol & Description	Part No.
	C186,C187	CKPUYB391K50

OTHERS

Mark	Symbol & Description	Part No.
	JA102 RGB connector (AV connector)(OUT)	VKB1037

◉ FLKB Assembly (VWM1176)

FLKB assembly is composed of the FLKY, PSWB and HEPB assemblies.

FLKY Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC101	PDB044A
	IC102	PST529D
	Q104	DTA124ES
	Q103	DTA144ES
	Q102	DTC114ES
	Q101,Q108,Q109	DTC124ES
	Q105,Q106	2SA854S
	D112,D113	VEL1003
	D101-D109	1SS252
	D110,D111	AY3665S

SWITCHES

Mark	Symbol & Description	Part No.
	S102-S128 Tact switch (SINGLE,EDIT,LANGUAGE, DIRECT SEARCH(0-9,+10), PGM,DIRECT CD,DISC SIDE(A,B), SKIP(⏮,⏭),OPEN/CLOSE(⏏), STOP(■),PLAY/PAUSE(▶/⏸), RANDOM PLAY,INTRO SCAN, REPEAT(A,B))	RSG1030
	S129 (JOG &SHUTTLE)	VSD1007
	S101 Door switch	VSH1008

CAPACITORS

Mark	Symbol & Description	Part No.
	C104,C106	CEALNP100M35
	C101	CEAS101M6R3
	C103	CKPUYB102K50
	C105	CKPUYF223Z25

RESISTORS

Mark	Symbol & Description	Part No.
	R108 Resistor array	RA4T472J
	R106 Resistor array	RA7S104J
	Other resistors	RD1/6PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	X101 Ceramic resonator (6.00MHz)	VSS1041
	FL spacer	VEB1140
	V101 Fluorescent indicator tube	VAW1015
	PL101,PL102 Lamp	VEL1016

PSWB Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D301	VEL1018

SWITCH

Mark	Symbol & Description	Part No.
	S301 - S303 Tact switch (AUDIO, DISPLAY, POWER)	RSG1030

CAPACITOR

Mark	Symbol & Description	Part No.
	C301	CKPUYF223Z25

OTHER

Mark	Symbol & Description	Part No.
	IR sensor unit	GP1U50X

HEPB Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C203	CGCYX473K25
	C201,C202	CKPUYB102K50

RESISTOR

Mark	Symbol & Description	Part No.
	VR201 Double rotary volume (LEVEL)	VCS1015

OTHER

Mark	Symbol & Description	Part No.
	JA201 Headphone jack (PHONES)	RKN1002

HEAD Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	Q1	2SC4081

CAPACITORS

Mark	Symbol & Description	Part No.
	C3	CKSQYF104Z25
	C5	CKSYF105Z16

RESISTOR

Mark	Symbol & Description	Part No.
	VR1 Semi-fixed (10kΩ)	VCP1025

CNNB Assembly

SWITCH

Mark	Symbol & Description	Part No.
	S201 Lever switch	VSK1017

RESISTORS

Mark	Symbol & Description	Part No.
	R102	RD1/6PM221J
	R101	RD1/6PM272J

OTHERS

Mark	Symbol & Description	Part No.
	CN203 22P Side connector	VKN1138
	CN204 25P Side connector	VKN1139

Power Supply Board Assembly (VWR1121)

SEMICONDUCTORS

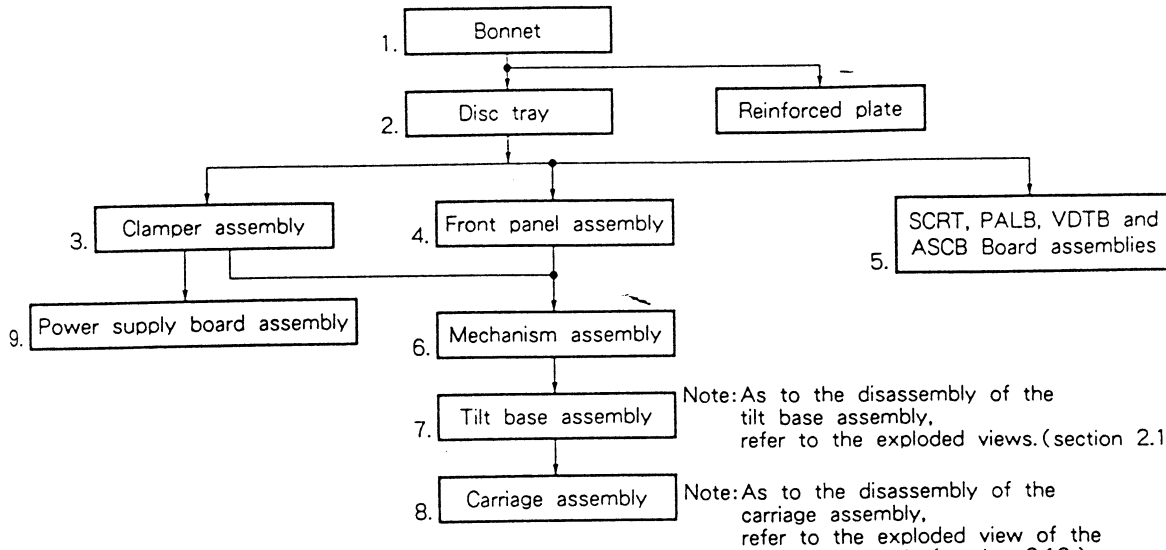
Mark	Symbol & Description	Part No.
	IC211,IC212	ICP-N15
	IC215	ICP-N38
	IC213,IC214	ICP-N50
	IC202	TH5P4
	Q201	2SB1331
	Q202	DTC114ES
	D205,D209 - D210,D213 - D215	D1NL20
	D204	ERB83-006
	D207	MTZ6.2B
	D206	MTZ7.5B
	D201 - D203	S3LA20

COIL

Mark	Symbol & Description	Part No.
	L203 Coil(10mH)	VTL1008

Other parts are not supplied.

6. DISASSEMBLY



1. Bonnet

①Remove four screws Ⓐ from the both sides of bonnet and remove three screws Ⓑ from the rear of the bonnet.

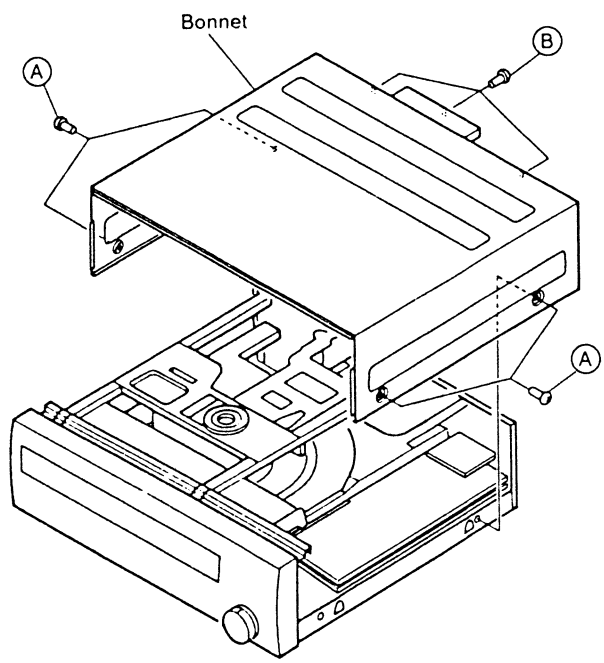


Fig. 6-1

2. Disc Tray

①Turn the power switch on and press the OPEN button then pull the tray out from the player.

②Remove two tray stopper screws Ⓐ.

③Pull out the tray toward the front.

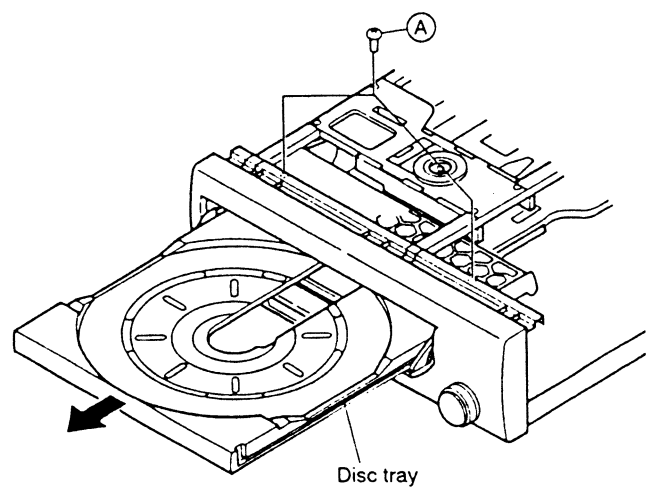


Fig. 6-2

3. Clamper Assembly

①Remove four screws Ⓐ to remove the clamper assembly.

②Remove a screw Ⓑ to remove the clamper.

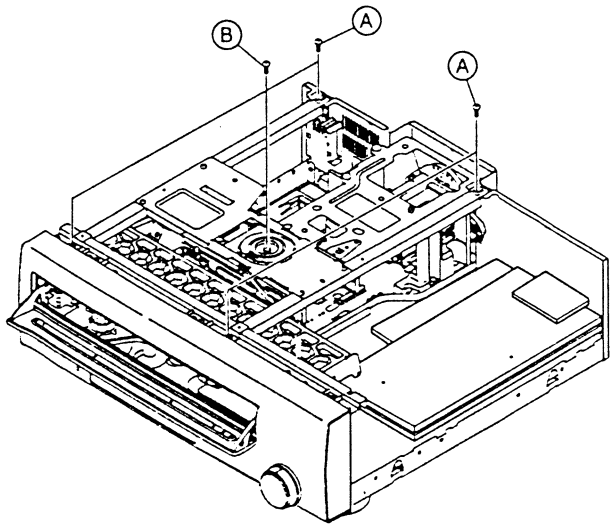


Fig. 6-3

③Remove two screws Ⓒ.

④Remove two springs Ⓓ. (Be careful of the one side of spring is fixed with bond adhesive.)

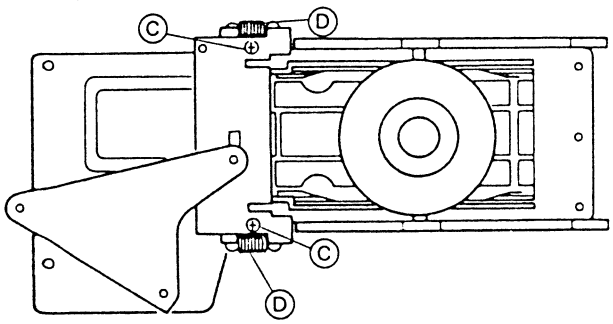


Fig. 6-4 Rear side of the clamper assembly

⑤Set the roller pin to lowermost point of the clamp cam for clamper. Then remove the clamp cam by sliding it.

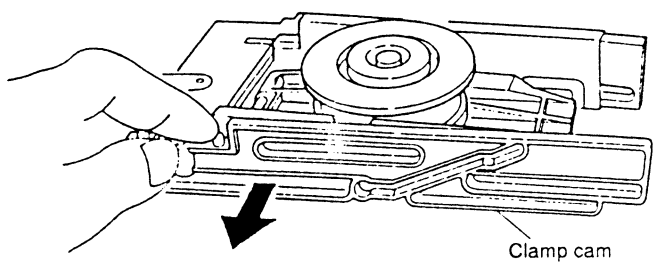


Fig. 6-5

4. Front Panel

①Remove three screws Ⓐ by openig the front door (tray is out).

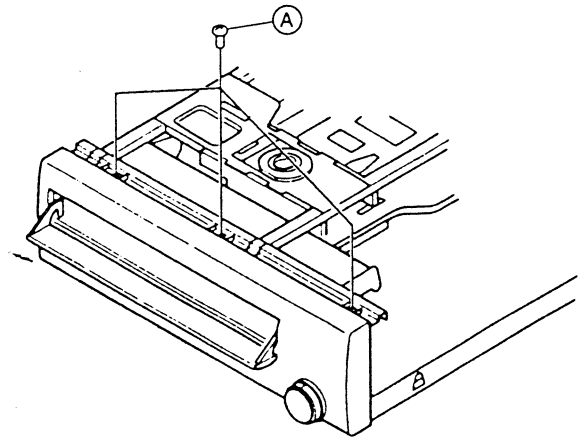


Fig. 6-6

②Disconnect three connector cables Ⓑ.

③Remove ten screws Ⓒ to remove the FLKY assembly and three screws Ⓓ to remove the jog dial.

④Pull out the jog dial.

⑤Remove three screws Ⓔ to remove the PSWB assembly.

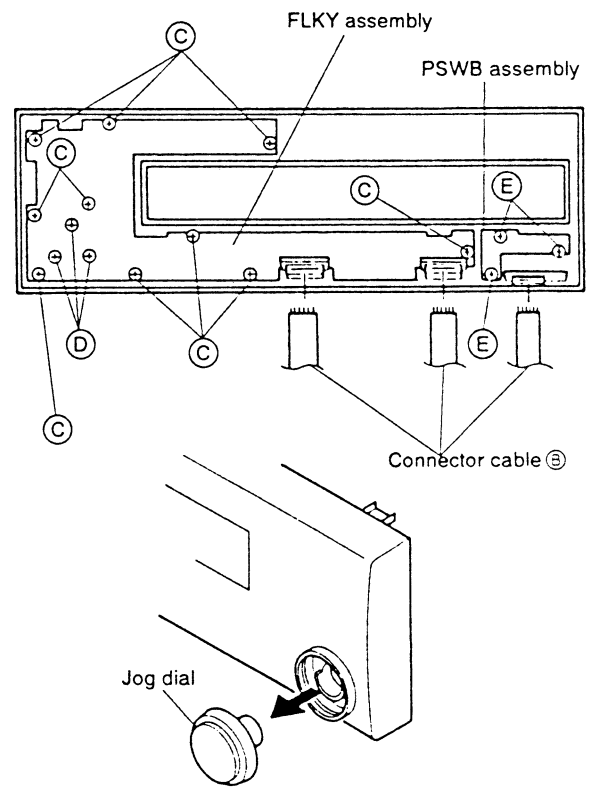


Fig. 6-7

5. SCRT, PALB, VDTB and ASCB Board Assemblies

-SCRT Board assembly-

①Remove two screws Ⓐ.

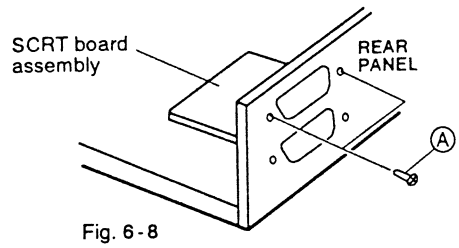


Fig. 6-8

-PALB and VDTB Board assemblies-

①Remove two screws Ⓑ.

②Remove two screws Ⓒ.

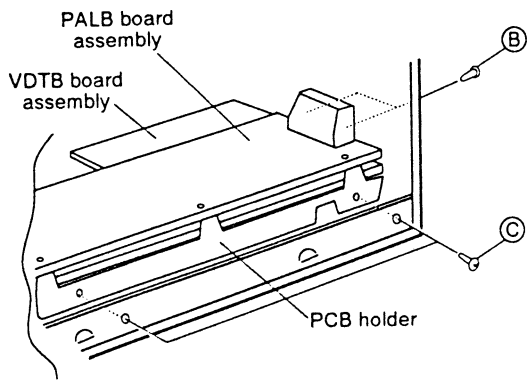


Fig. 6-9

Note: When checking the PALB and VDTB board assemblies on a measuring instrument, it is recommend to disassemble them together with the PCB holder as shown above.

-ASCB Board assembly-

①Disconnect the flexible cable.
(Be careful of the static electricity.)

②Remove four screws Ⓓ from the rear side.

③Remove four screws Ⓔ.

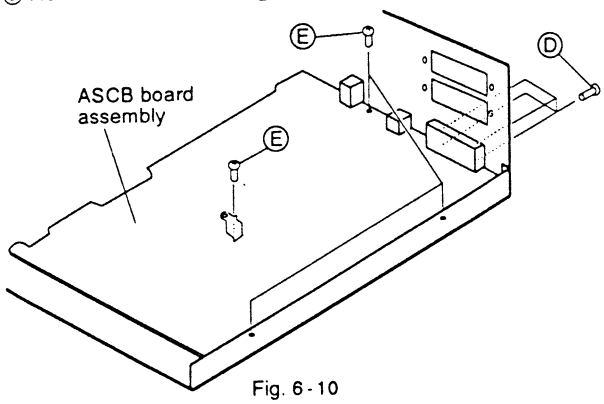


Fig. 6-10

-Diagnosis of the ASCB board assembly-

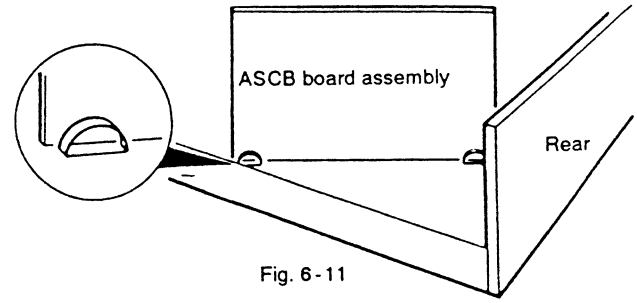


Fig. 6-11

6. Mechanism Assembly

Note: The flexible cable should be removed.

①Remove three screws Ⓐ from the left side of the slide cam.

②Remove two screws Ⓑ from the side stay (L).

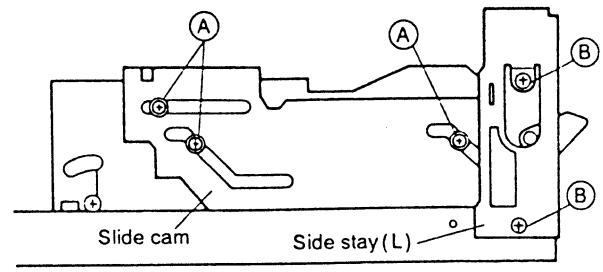


Fig. 6-12

③Remove seven screws Ⓒ from the mechanism chassis to remove the mechanism assembly.

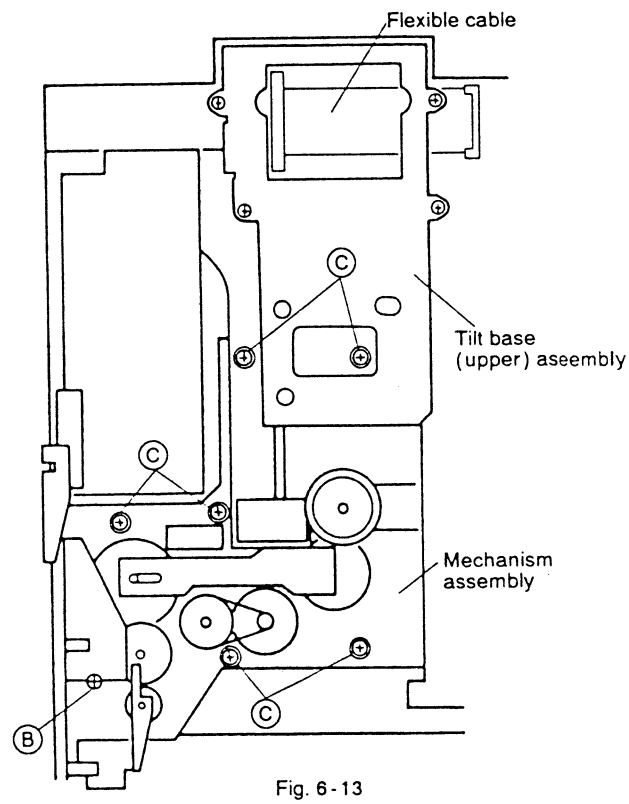


Fig. 6-13

-Positioning the gears and the grease apply points-

1. Apply a grease to the spring slanting cam.

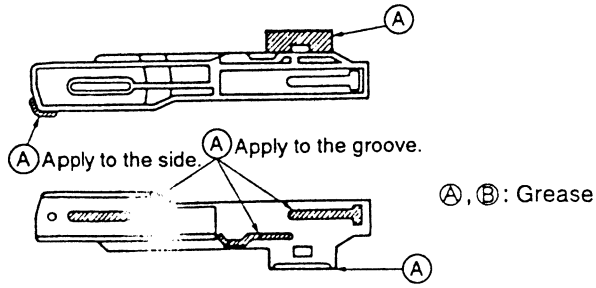


Fig. 6-14

2. Apply a grease to the cam gear.

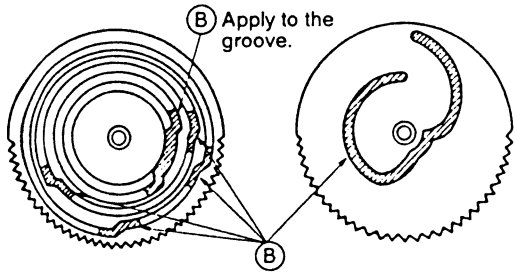


Fig. 6-15

3. Apply a grease to the follow gear.

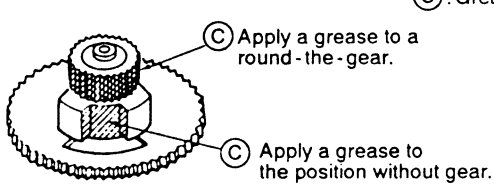


Fig. 6-16

4. Positioning the cam gear.
   ① Move two cams in the direction of arrow.
   ② Move this cam in the direction of arrow.
   ③ Insert the cam gear so that the end of the cam gear comes to the position nearest to the shaft.
   ④ Confirm that two cams are moved when turning the cam gear to the shaft in the direction of arrow.
   ⑤ Confirm that the cam is turned when pressing the direct SW.

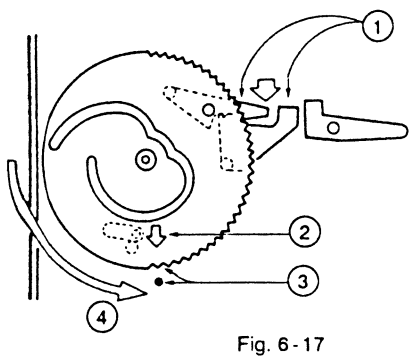


Fig. 6-17

5. Mount the spring slanting cam
   ① Set the cam gear as shown in the Fig. 6-18 and take down the SW.
   ② Engage the ⓐ of the spring slanting cam with ⓐ'.
   ③ Set the position of the projection tipped of the tilt base is on the edge of the spring slanting cam.
   And slide the spring slanting cam in the direction of arrow. (See Fig. 6-19).

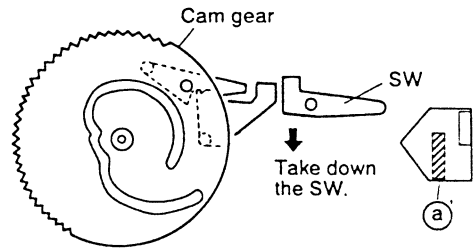


Fig. 6-18

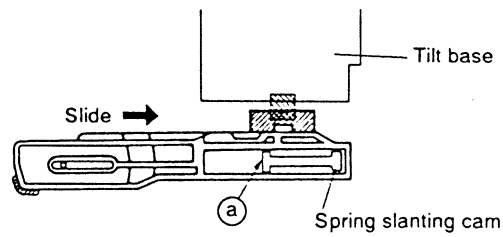


Fig. 6-19

6. Positioning the roller plate assembly (slide gear).

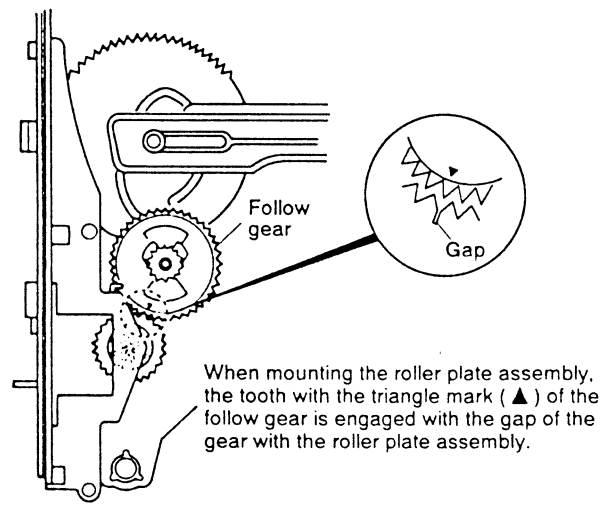


Fig. 6-20

● How to replace the flexible cable

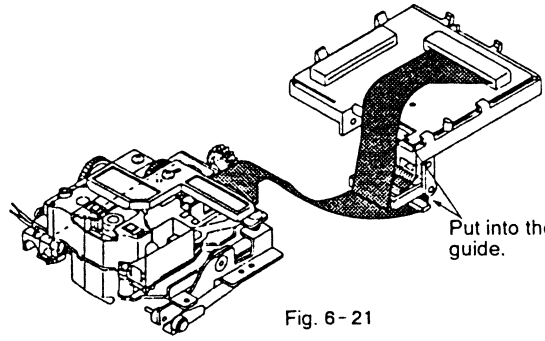


Fig. 6-21

8. Carriage Assembly

① Slide the carriage assembly to the shaft of the turn plate by hand.

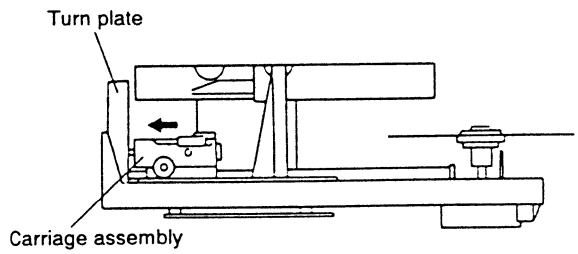


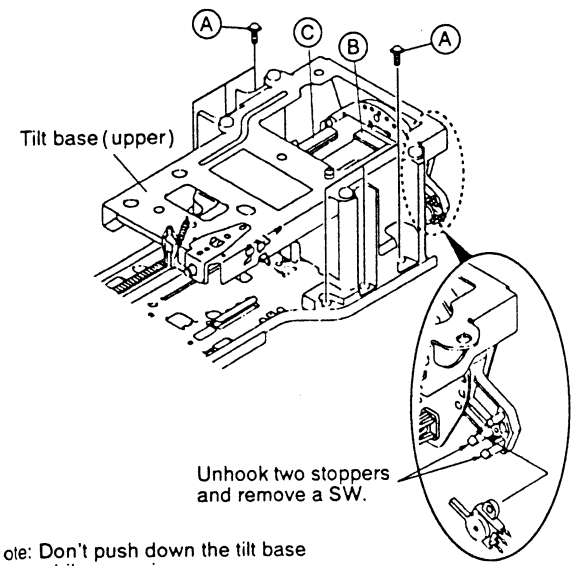
Fig. 6-22

② Disconnect two connectors Ⓑ and Ⓒ from the CNNB assembly to remove the flexible cable.

③ Remove six screws Ⓐ from the post(L) and (R) to remove the tilt base.

④ Pull out the carriage assembly by setting the tilt base (upper) toward the upper.

⑤ Unhook two stoppers and remove a SW.



Note: Don't push down the tilt base while removing screws.

Fig.6-23

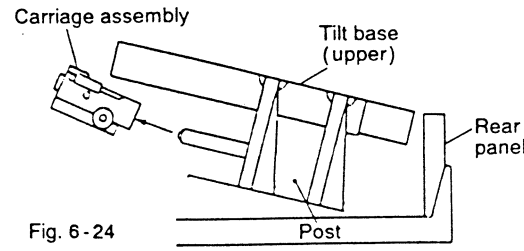


Fig. 6-24

9. Power Supply Board Assembly

① Insert a screwdriver into the chassis hole near a strain relief through the back of the base chassis and remove the strain releif stop ring.

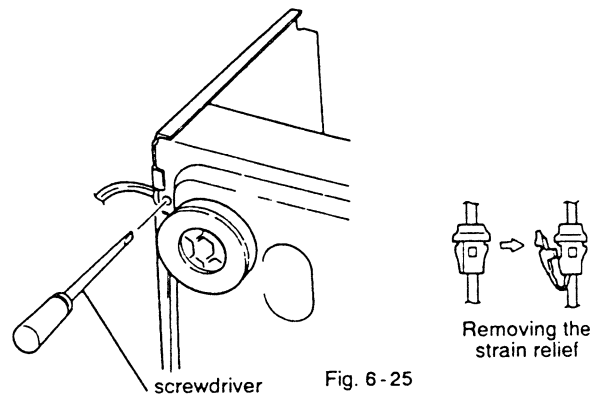


Fig. 6-25

② Remove four screws Ⓐ and raise the power supply board assembly. Then the power supply board assembly can be diagnosed for component replacement through the foil side.

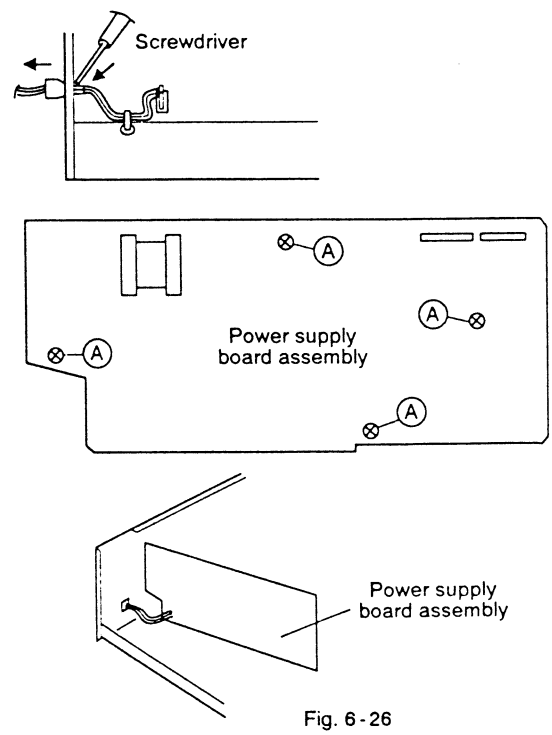


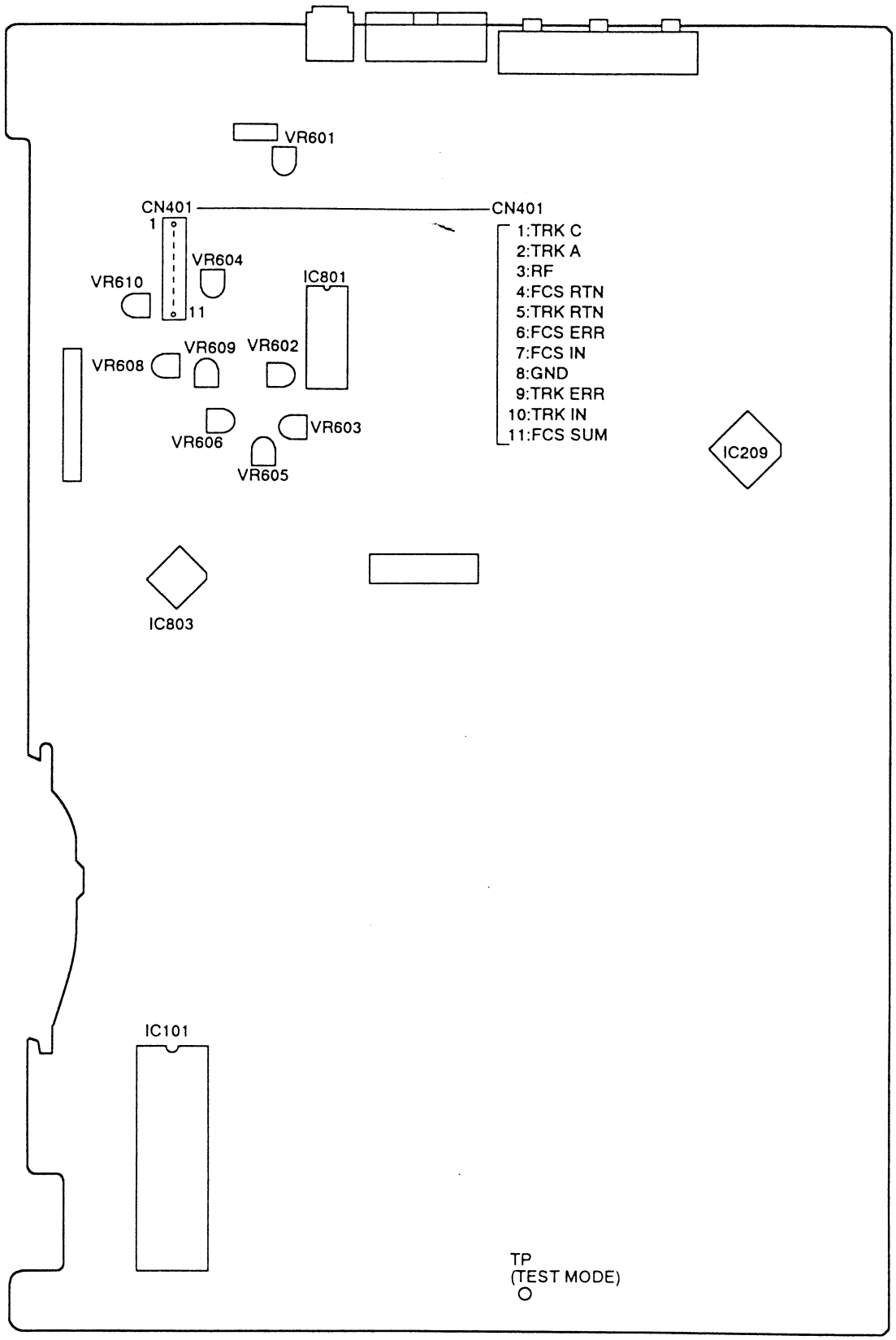
Fig. 6-26

7. ADJUSTMENTS

7.1 ASCB BOARD ASSEMBLY ADJUSTMENT ABSTRACT

	ADJUSTMENT	Adjusting Point	Measurement equipment Connecting Point	Player Condition	Adjusting Specification
1	Tilt Servo Gain Adjustment	VR608	None	• Power OFF	• Making of Tilt gain VR position Red : Turn to right Clear : Center Blue : Turn to left
2	Coarse Grating and Tracking Balance Adjustment	Grating / VR602	CN401-9 (TRKG ERR)	• Test mode #6,500 TRKG servo open	• Null point → TRK error MAX • Adjust VR602 so that the TRK error waveform amplitude's positive and negative level become equal.
3	Slider Shaft Horizontal Adjustment	Player SKIP key	CN401-4 (FOCS RTN)	• #9,800 , #23,800 TRKG servo open • TILT servo OFF	• Adjust so that the FOCS RTN voltage becomes 0 ± 20mV.
4	Pickup Inclination Adjustment	Pickup assembly TAN / TRK inclination adjustment screw	CN401-3 (RF)	• Test mode , #2,251 still TRKG servo loop close • TILT servo OFF	• RF waveform's amplitude MAX (Pickup TAN / TRK adjustment screw) • Minimized crosstalk.
5	TRKG Error Best / Crosstalk Best Adjustment	VR605 (TE BEST) VR606 (CT BEST)	CN401-3 (RF) CN401-9 (TRKG ERR)	• Test mode TRKG servo close /open • TILT servo OFF	• TRK error BEST (VR605) RF BEST (VR606)
6	FOCS SUM Level Adjustment	VR609	CN401-11 (FOCS SUM)	• Play mode	• Adjust VR609 so that the voltage becomes 1.5V DC.
7	Tilt Sensor Inclination/ Tilt Balance Adjustment	Tilt senser inclination adjustment screw VR610(TILT BAL.)	TV monitor Test mode screen	• Test mode #16,200 / #475 still TRKG servo loop close • TILT servo OFF	• Set VR610 to the center. • Adjust the adjustment screw so that the tilt error display code is 6, 7, or 8. • Adjust VR610 so that the tilt error display becomes 7.
8	Spindle Motor Centering Check	Check the lissajous figure.	CH1:CN401-9(TRKG ERR) CH2:CN401-1, 2(TRKG A+C)	• Test mode #100 and #23,800 TRKG servo open	• Check that the amplitude of the lissajous figure of the frame #100 is the same as that of the frame #23,800.
9	Spindle Motor Centering Adjustment	Spindle motor centering adjustment screw	CH1:CN401-9(TRKG ERR) CH2:CN401-1, 2(TRKG A+C)	• Test mode #100 and #23,800 TRKG servo open / close	• Adjust the centering adjustment screw so that the lissajous figures of #100 and #23,800 are the same.
10	Fine Grating Adjustment	Grating	CH1:CN401-9(TRKG ERR) CH2:CN401-1, 2(TRK A+C)	• Test mode #6,500 still TRKG servo open	• Minimize the Y direction of the lissajous figure. • Level of the X direction of the lissajous figure are equal.
11	RF Gain Adjustment	VR601	CH1:CN401-3 (RF)	• Test mode #15,000 still TRKG servo close	• Adjust VR601 so that the RF level becomes 300mV ± 50mV.
12	FOCS Servo Loop Gain Adjustment	VR604	CH1:CN401-6 (FOCS ERR) CH2:CN401-7 (FOCS IN)	• Test mode #15,000 still TRKG servo close	• Adjust VR604 so that the lissajous figure is symmetrical with respect to the X and Y axes.
13	TRKG Servo Loop Gain Adjustment	VR603	CH1:CN401-9 (TRKG ERR) CH2:CN401-10 (TRKG IN)	• Test mode #15,000 still TRKG servo close	• Adjust VR603 so that the lissajous figure is symmetrical with respect to the X and Y axes.
14	Centering Adjustment for Side B Play	Centering adjustment hole for side B	CH1:CN401-9(TRKG ERR) CH2:CN401-1, 2(TRKG A+C)	• Test mode #100 play TRKG servo open / close	• Adjust so that the X-axis amplitude of the lissajous figure becomes maximum.
15	Pickup Tangential Direction Angle Adjustment for Side B Play	Pickup tangential direction angle adjustment screw	TV monotor	• Test mode #475 still	• Adjust so that the crosstalk is minimized.
16	Fine Centering Adjustment for Side B Play	Centering adjustment hole for side B	CH1:CN401-9(TRKG ERR) CH2:CN401-1, 2(TRKG A+C)	• Test mode #100 play TRKG servo open	• Adjust so that the X-axis amplitude of the lissajous figure becomes maximum.

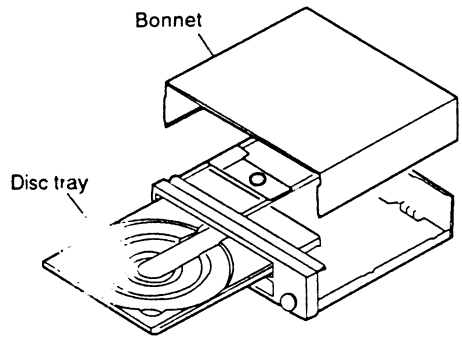
7.2 ADJUSTMENT POINTS OF THE ASCB BOARD ASSEMBLY



7.3 TEST MODE

7.3.1 TEST MODE

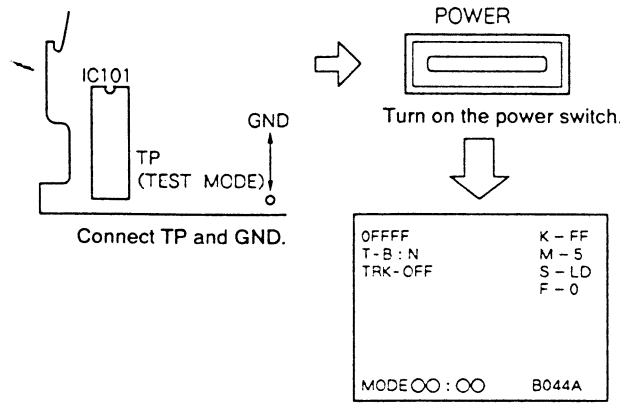
The player has a test mode function which allows the servicer to check the player's status on the TV screen by executing the respective key operation.
Also, since the TRK servo opens and closes easily, the test mode is especially useful for mechanical adjustments.



7.3.2 TEST MODE INITIATION

[Procedure]

1. Remove the bonnet and disc tray.
2. Connect the TP(TEST MODE) in the ASCB board assembly to GND.
3. Turn on the power switch.
4. Disconnect the TP(TEST MODE) from GND.



7.3.3 TEST MODE CANCELLATION

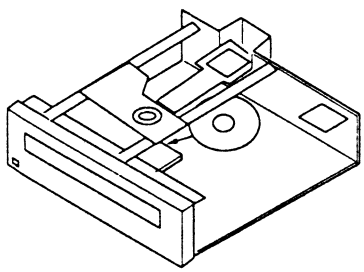
Turn off the power switch.

7.3.4 PLAYER OPERATION IN THE TEST MODE

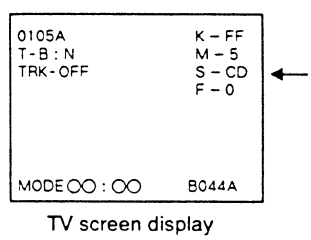
Operate the player by selecting a test mode function with the keys on the player or on the remote control unit.

- CD PLAYBACK

① Place the CD disc on the turn table. (Clamper is already lifted up.)



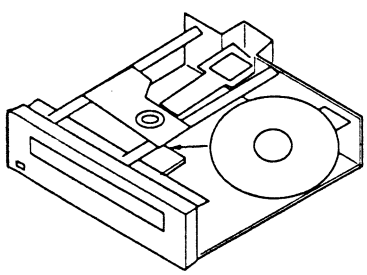
② Press the ◀◀ or ▶▶ keys to appear "S-CD" on the TV screen display.



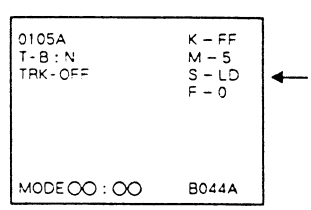
③ Clamp the disc by pressing the PLAY (▶) key once. Then, press the PLAY (▶) key twice, disc will be normal playbacked.

- LD PLAYBACK

① Place the LD disc on the turn table. (Clamper is already lifted up.)



② Press the ◀◀ or ▶▶ keys to appear "S-LD" on the TV screen display.

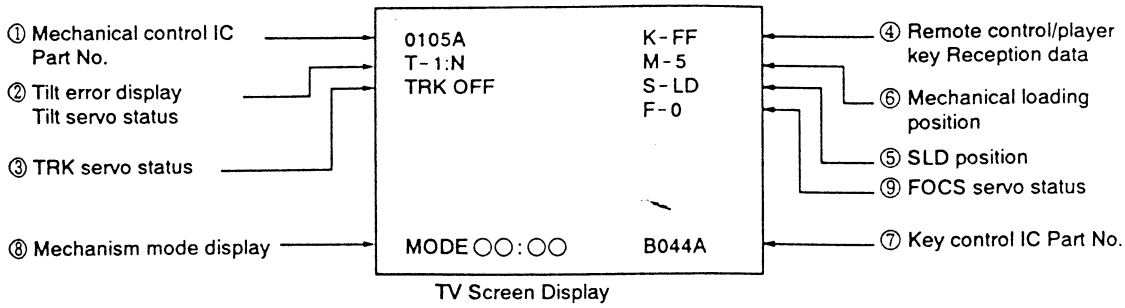


③ Clamp the disc by pressing the PLAY (▶) key once. Then, press the PLAY (▶) key twice, disc will be normal playbacked.

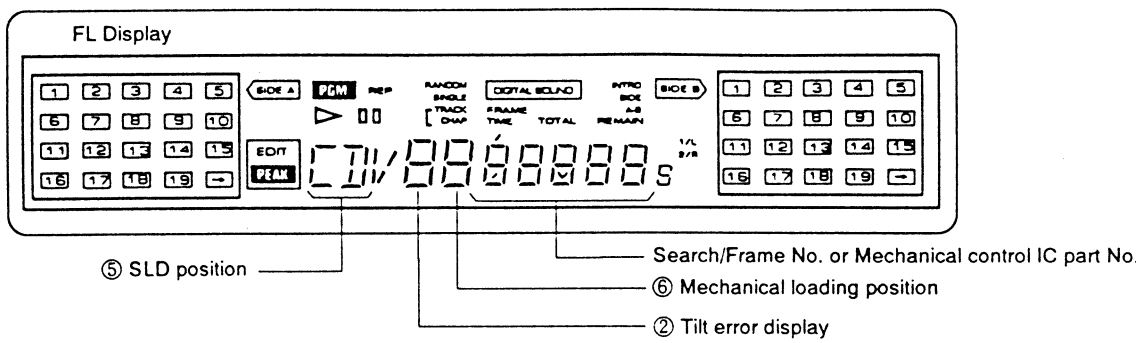
Table. Operation in the test mode.

Function	Player Status	Key Operation	Remarks
Open Tray	STOP mode	▲	
Close Tray	Tray open	▲	
Stop	PLAY mode	■	
Play	Disc in place and tray closed.	▶	• Start play with the TRK servo open. • Raise up with tilt neutral. • The disc type (LD/CD/CDV) is determined when playback starts at the SLDR position during start play.
TRK Servo Open/Close	PLAY mode	▶	• Each time the PLAY button (▶) is pressed, the TRK servo will open or close alternately.
Still	PLAY mode TRK servo closed.	II	• Each time the PAUSE button (II) is pressed, the player will switch between the PLAY and STILL modes alternately.
SLDR REV SCAN	PLAY mode	◀◀	• Counterclockwise • With the TRK servo open, the pickup can be damaged if the SLD moves further inward than the lead-in area on the disc. Do not allow the SLD to move further inward than the lead-in area .
SLDR FWD SCAN	PLAY mode	▶▶	• Clockwise • With the TRK servo open, the pickup can be damaged if the SLD moves further outward than the lead-in area on the disc. Do not allow the SLD to move further outward than the lead-in area.
TILT Neutral	POWER switch ON	EDIT	
TILT Servo ON	PLAY mode	RANDOM PLAY	
TILT Minus TILT Servo OFF	PLAY mode	I◀◀	• Press and hold down the keys.
TILT Plus TILT Servo OFF	PLAY mode	▶▶I	• Press and hold down the keys.
Screen Display ON / OFF	POWER switch ON	PGM key	
Frame search	PLAY mode	+10 key ↓ 0-9 key ↓ ▶	• In the PLAY mode, press the +10 key. (The player will stand by for the frame No. entry.) • Use the numeric keys(0 – 9) to enter the frame No.. Then press the player's PLAY key to search. • After the search is completed, the player will return to the operation mode before the search was performed.
Loading Motor Rotation Clockwise Counterclockwise	Tray open	▶▶I I◀◀	• FWD:Unloading • REV:Loading
Focus Offset (CT BEST) for Checking VR606	PLAY mode TRKG servo open	Remote control unit key •MULTI-SPEED FWD ➡ F-1 REV ➡ F-0 Player key •INTRO SCAN	VR606 and VR605 : For check F – 0 : Normal state - - - - - - TRKG close : VR606 (CT BEST) TRKG open : VR605 (TE BEST) F – 1 : VR606 is effective when opening the TRKG.

7.3.5 TV SCREEN AND LED DISPLAYS IN THE TEST MODE



TV Screen Display



① The Mechanical Control IC (ASCB board assembly) Part No. will be Displayed.

PD0105A1 → 0105A

② Tilt Servo Status / Tilt Error Display

T-○:○○

- Tilt servo status : N...Tilt neutral
  ON...Tilt servo ON
  OFF...Tilt servo OFF
- Tilt error display: 0 Tilt −
  ↕ Tilt neutral
  F Tilt +

③ TRK Servo Status

TV screen display

TRK-○○○

└—ON...TRK servo close

OFF...TRK servo open

④ Remote Control / Player Key Reception Data

TV screen display

K-○○

└— See table below

Code	Function	Code	Function	Code	Function	Code	Function
00	0	20	F JOG0	40	(CHAP / TRK)	60	
01	1	21	F JOG1	41	(FRAM / TIM)	61	
02	2	22	F JOG2	42	(SEARCH)	62	
03	3	23	F JOG3	43	DISPLAY	63	
04	4	24	R JOG0	44	REPEAT B	64	
05	5	25	R JOG1	45	CLEAR	65	
06	6	26	R JOG2	46	SPEED –	66	
07	7	27	R JOG3	47	SPEED +	67	
08	8	28		48	REPEAT A	68	
09	9	29		49	(2 / R)	69	
0A	VOLUME +	2A		4A	(STEREO)	6A	
0B	VOLUME –	2B		4B	(1 / L)	6B	
0C	DGT / ANL	2C		4C	PROGRAM	6C	
0D		2D		4D		6D	PLAY /PAUSE
0E	CX ON/OFF	2E		4E		6E	STOP
0F	(TV / LDP)	2F		4F		6F	OPEN / CLOSE
10	(F-SCAN)	30		50	F-STEP	70	
11	(R-SCAN)	31		51		71	DIRECT CD
12		32		52	F-SKIP	72	PEAK
13	CHAP / FRME	33		53	R-SKIP	73	SINGLE
14		34		54	R-STEP	74	
15		35		55	R-MULT	75	
16	STOP / OPEN	36		56		76	
17	PLAY/SERCH	37	DGT LEVEL	57		77	
18	PAUSE	38		58	F-MULT	78	
19		39		59		79	
1A	(POW ON)	3A		5A	HILIT / INTR	7A	
1B	(POW OFF)	3B		5B		7B	
1C	POW ON/OFF	3C		5C		7C	
1D	EDIT	3D		5D		7D	
1E	AUDIO	3E		5E	RNDM (TEST)	7E	
1F	+10	3F		5F	(ESC)	7F	

⑤ SLD Position

TV screen display

S-○○○

└ IN ... CD inside SW ON

CD ... CD active area

CDV ... CDV active area

LD ... LD active area

B IN ... LD B inside SW ON

⑥ Mechanical Loading Position

TV screen display

M-○

└ 0 ... Tray open

1 ... Loading

2 ... Standby

3 ... Clamped

5 ... Tilt minus

7 ... Tilt plus

8 ... Tilt limit

9 ... B side clamped (two sides)

⑦ Focus offset VR Status

TV screen display

F-○

└ 0 ... Normal state

TRKG close : VR606(CT BEST)

TRKG open : VR605(TE BEST)

1 ... VR606 is effectived when opening the TRKG.

7.4 ADJUSTMENTS

7.4.1 JIGS AND INSTRUMENTS REQUIRED FOR ADJUSTMENT

- Small screwdriver (about 10cm long)
- Small Phillips screwdriver
- Hexagonal wrenches (2.0mm and 2.5mm)
- Dual-trace oscilloscope (with delay)
- AF oscillator
- Frequency counter
- LD test disc (GGV1007)
- LDD disc (buy locally)
- CD test disc (YEDS-7)
- Shorting clip
- L-shaped eccentric screwdriver (GGV-129)
- Phillips head screwdriver
- Resistor (47kΩ, 10kΩ × 2)
- Low-pass filter (47kΩ +1 μF)
- Digital voltmeter

7.4.2 PREPARATIONS FOR ADJUSTMENTS AND PRECAUTIONS

1) Adjust the height of the turntable when the spindle motor is replaced.

2) Side B play

Direct side B play is possible by pressing the SIDE B key of the front panel.

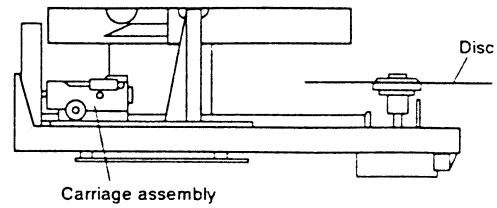
3)Test disc

The LD test disc used for mechanical adjustment and ASCB board assembly adjustment may either be the GGV1007. The frame numbers given in the text are for the GGV1007.

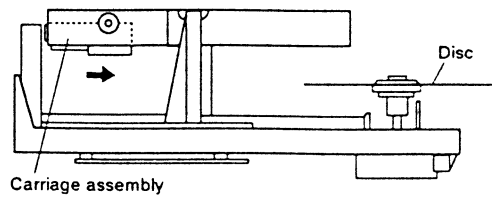
4) Numbers given in connection diagram correspond to those in the text covering the adjustment procedure.

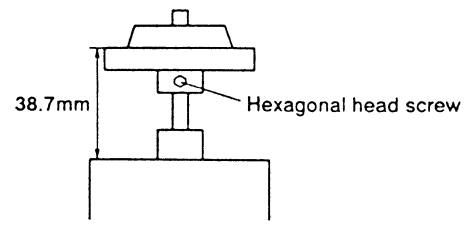
5) Frame numbers are not displayed on the monitor TV, please read the FL display.

Carriage assembly forward state



Carriage assembly reverse state





Loosen the hexagonal head screw and measure the height with a caliper. Then retighten the screw.

Turntable height adjustment

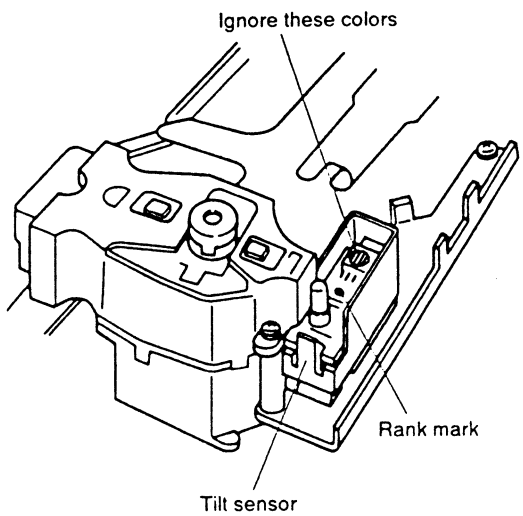
7.4.3 MECHANICAL ADJUSTMENTS

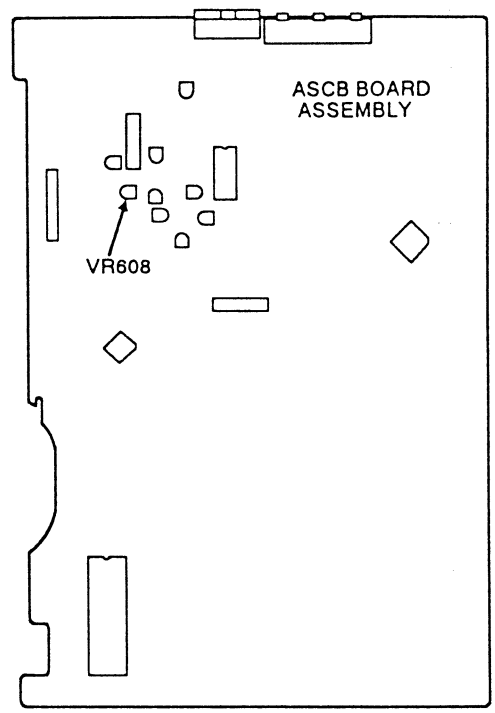
1. TILT SERVO GAIN ADJUSTMENT

- Purpose: Adjustment of the tilt servo's gain according to the tilt sensor's sensitivity rank.
- When not properly adjusted: Increased tilt servo hunting and increased crosstalk.

• Measuring instruments and jigs: • Measuring point: • Test disc and player mode	• Small screwdriver
• Positions to be adjusted	• VR608 (TILT GAIN)

Connection diagram





Adjustment Procedure

1. Use a screwdriver to adjust the angle of VR608 on the ASCB board assembly according to the rank indicator's color.

Rank	Color	VR Angle
A	Red	Clockwise all the way
B	Clear	Mechanical center
C	Blue	Counterclockwise all the way

2. COARSE GRATING AND TRACKING (TRKG) BALANCE ADJUSTMENT

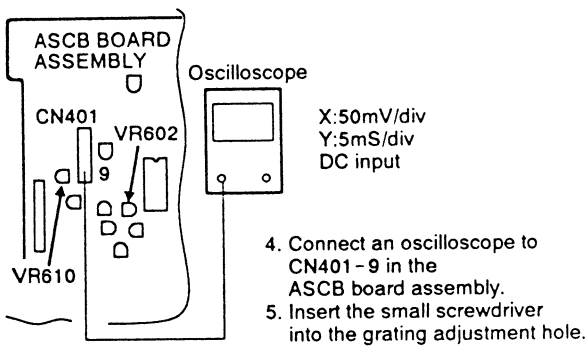
Mechanical Adjustment

● Purpose: To adjust the laser beam which is divided into three by the grating to the optimum position on the track. Set the TRKG servo offset voltage to 0 V.

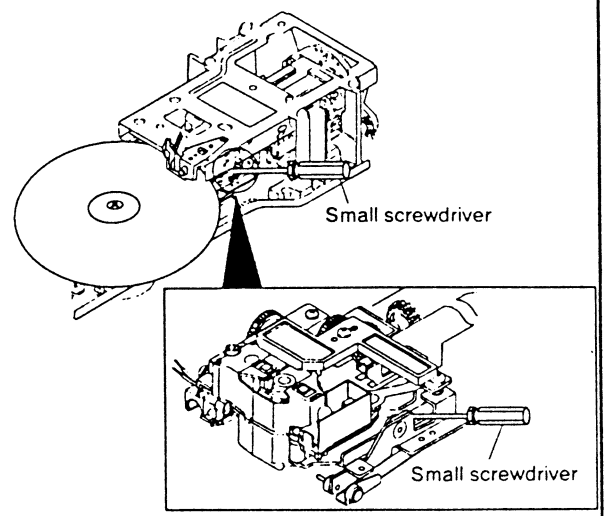
● When not properly adjusted: Disc playback will be impossible. During play, tracks may be skipped.

● Measuring instruments and jigs:	● Small screwdriver ● Oscilloscope
● Measuring point:	● CN401-9 (TRKG ERR)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#6,500 ● Test Mode (TRKG servo:Open) ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● Grating ● VR602 (TRKG balance)

Connection diagram



4. Connect an oscilloscope to CN401-9 in the ASCB board assembly.
5. Insert the small screwdriver into the grating adjustment hole.



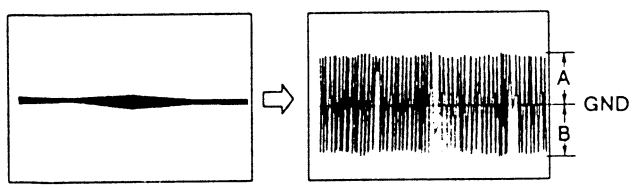


Fig. 1 Nul point

Fig. 2 Maximum amplitude A=B

Adjustment Procedure

<Coarse Grating Adjustment>

1. Play the LD test disc.
2. Search around for frame #6,500.
3. Open the TRKG servo. (See section 7.3.)
4. Connect an oscilloscope to CN401-9 and observe the waveform.
5. Insert the small screwdriver into the grating adjustment hole. Turning the grating will allow you to vary the amplitude of the TRKG error waveform. Find the position where the waveform amplitude becomes minimum with a smooth envelope. (Fig. 1) (This indicates that the 3-way split laser beams are directed onto the track. This is called the nul point.)
6. Slowly turn the grating counterclockwise from the on track position until the waveform amplitude becomes maximum. (Fig. 2)
7. Close the TRKG servo and check that a normal picture is displayed on the TV screen.

<TRKG Balance Adjustment>

1. Align the oscilloscope GND so that it comes to the center of the oscilloscope screen.
2. Adjust VR602 so that the positive and negative amplitudes of the TRKG error waveform become equal. (Fig. 2)

Note: If adjustment of VR602 fails to disturb the tracking, perform the adjustment after set VR610 to the mechanical center.

3. SLDR SHAFT HORIZONTAL ADJUSTMENT

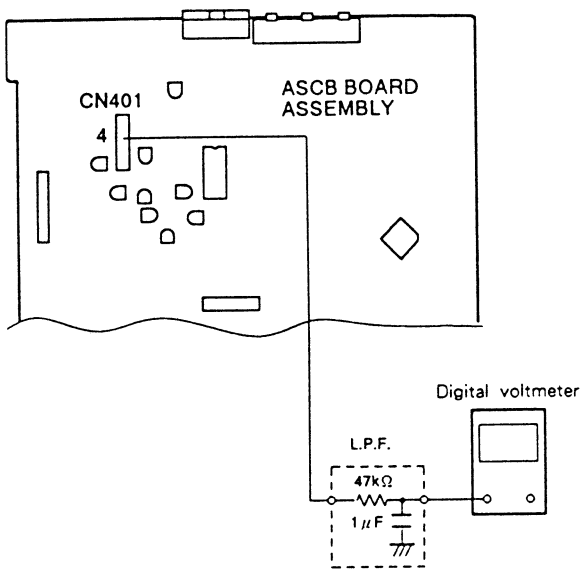
Mechanical Adjustment

● Purpose: Setting the slider shaft horizontally to enable the pickup to more over the disc horizontal.

● When not properly adjusted: With a warped disc, the FOCS servo does not function at the inner or outer periphery.

● Measuring instruments and jigs:	● Digital voltmeter ● Low-pass filter (47kΩ +1 μF)
● Measuring point:	● CN401 - 4 (FOCS RTN) and GND.
● Test disc and player mode	● 8 - inch LD test disc GGV1007 ● Test Mode (#9,800 / #23,800, TRKG servo:Open, Tilt servo OFF)
● Positions to be adjusted	● Player SKIP key (During test mode)

Connection diagram



Adjustment Procedure

1. Connect a digital voltmeter to CN401 - 4 via the L. P. F.
2. Open the TRKG servo, and search around for frame #9,800.
3. Check the voltage.
4. Search around for frame #23,800 and check that the voltage is same as the frame #9,800. If not, adjust the SKIP key so that the voltage is same as the frame #9,800.

4. PICKUP INCLINATION ADJUSTMENT

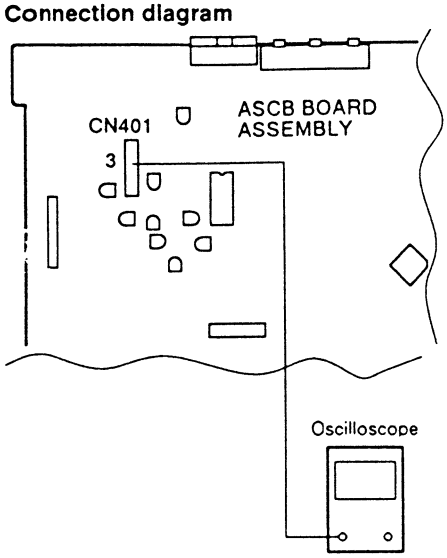
Mechanical Adjustment

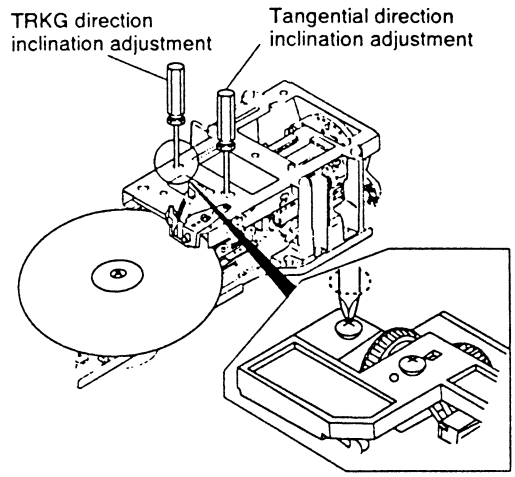
● Purpose: Adjustment of the pickup inclination to direct the laser beam vertically with respect to the disc.

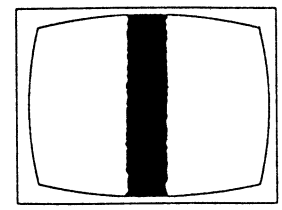
● When not properly adjusted: Crosstalk will be generated.

● Measuring instruments and jigs:	● TV monitor ● Phillips screwdriver ● Oscilloscope
● Measuring point:	● CN401 - 3(RF)
● Test disc and player mode	● 8 - inch LD test disc GGV1007 ● Test Mode(#2,251 still (Black screen)), Tilt servo OFF
● Positions to be adjusted	● Pickup assembly TRK / Tangential direction inclination adjustment screws

Connection diagram







Minimum crosstalk
on the screen

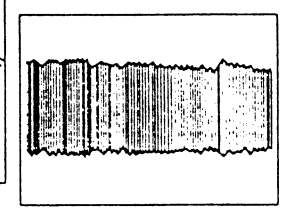


Fig. 1 RF waveform

Adjustment Procedure

1. Connect the oscilloscope to CN401 - 3.
2. Search for frame #2,251 and observe the RF waveform.(Fig. 1)
3. Adjust the pickup's TRK / Tangential direction inclination adjustment screw to maximize the waveform's amplitude.
4. Look at the TV screen and make sure there is no crosstalk.

Note : If there is crosstalk on the TV screen even when the RF level is at the maximum, perform next steps.

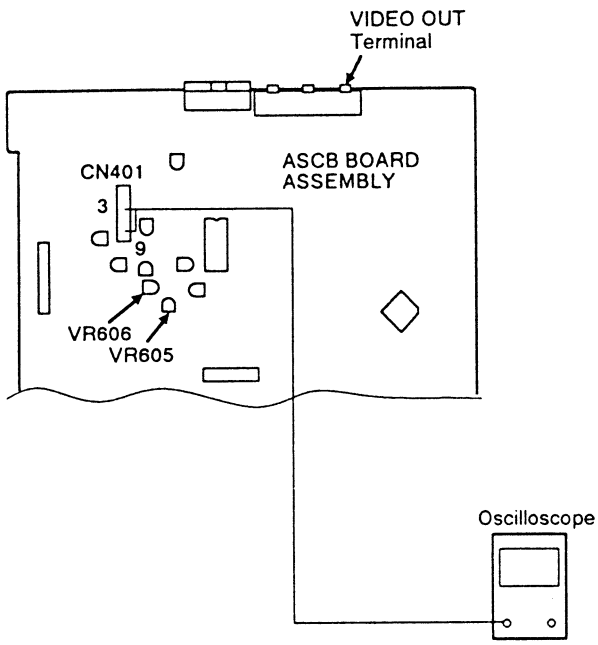
5. TRKG ERROR BEST/CROSSTALK BEST ADJUSTMENT

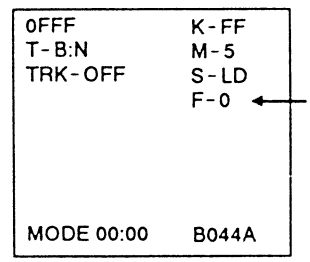
Mechanical Adjustment

- Purpose: To set the FOCS servo to the optimum state when playing the normal playback and track jump (search).
- When not properly adjusted: Crosstalk will be generated.

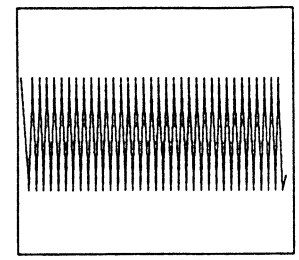
• Measuring instruments and jigs:	● TV monitor ● Oscilloscope
• Measuring point:	● CN401 - 3 (RF) ● CN401 - 9 (TRKG ERR) ● Player's VIDEO OUT terminal
• Test disc and player mode	● 8 - inch LD test disc (GGV1007) ● Test Mode (TRK servo close / open, Tilt servo OFF)
• Positions to be adjusted	● VR605 (TE BEST) ● VR606 (CT BEST)

Connection diagram

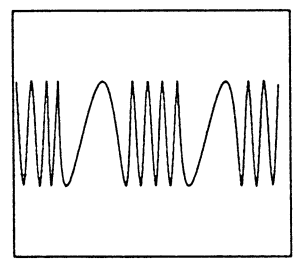




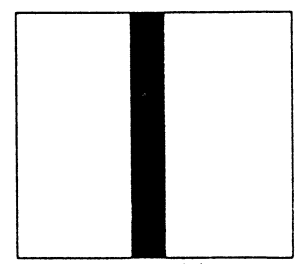
Screen display of test mode



Set to maximum RF amplitude at frame #2,251.



Maximize the TRKG error.



#475 crosstalk minimum

Adjustment Procedure

Note : Perform this adjustment when there is still noticeable crosstalk on the TV screen in section "4. Pickup Inclination Adjustment".

1. Connect the oscilloscope to CN401 - 9.
2. Open the TRK servo .
3. Confirm that the test mode screen display is F - 0.
   If not, set the MULTI - SPEED REV button of the remote control unit to F - 0.
4. Adjust VR605 so that the amplitude of the TRKG error waveform becomes maximum.
5. Close the TRKG servo.
6. Connect the oscilloscope to CN401 - 3.
7. Press the MULTI - SPEED FWD button of the remote control unit to display "F - 1" on the TV screen.
8. Search frame #2,251 and adjust VR606 so that the amplitude of the RF waveform becomes maximum.
9. Confirm that the crosstalk on the TV screen becomes minimum at frame #475.

Note : After adjustment is complete, be sure to perform "6. FOCS SUM Level Adjustment".

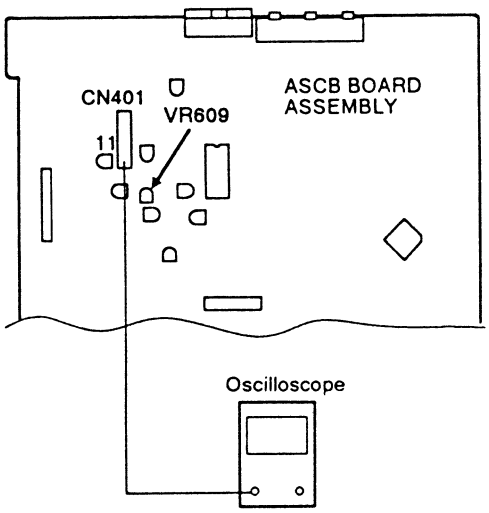
6. FOCS SUM LEVEL ADJUSTMENT

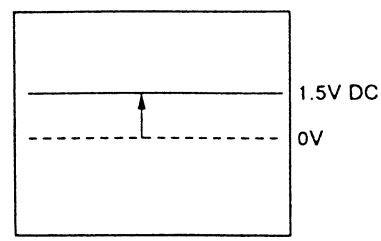
Mechanical Adjustment

- Purpose: To set the sum level (FOCS A+C) of B1 – B4 to the optimum value for activating the FOCS servo.
- When not properly adjusted: Play ability is poor.

• Measuring instruments and jigs:	• TV monitor • Oscilloscope
• Measuring point:	• CN401 - 11 (FOCS SUM)
• Test disc and player mode	• 8 - inch LD test disc GGV1007...#15,000 • Still mode • Test mode (TRKG servo : Close) • Tilt servo : Neutral
• Positions to be adjusted	• VR609 (FOCS SUM)

Connection diagram





Adjustment Procedure

Note : Perform this adjustment after perform the "5. TRKG Error Best / Crosstalk Best Adjustment".

1. Connect the oscilloscope to CN401 - 11.
2. Adjust VR609 so that the voltage becomes 1.5V DC.

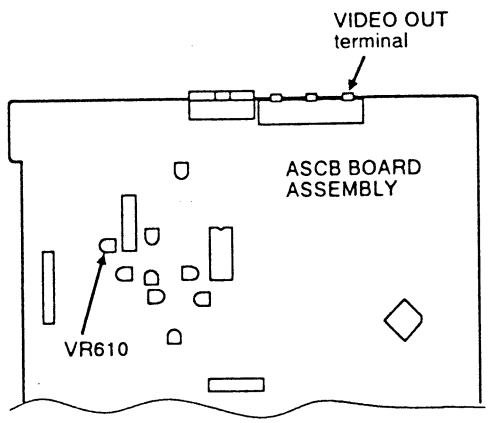
7. TILT SENSOR INCLINATION / TILT BALANCE ADJUSTMENT

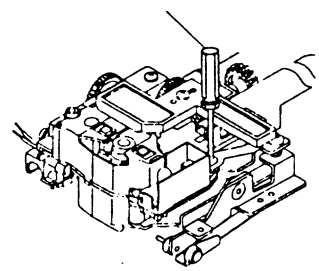
Mechanical Adjustment

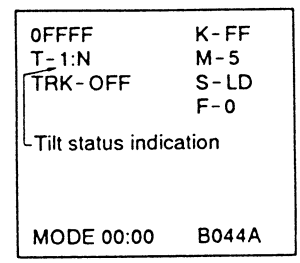
- Purpose: Adjustment of the tilt sensor's inclination to direct the tilt sensor's LED vertically with respect to the disc. Also, compensation for the sensitivity difference between the two sensors.
- When not properly adjusted: Crosstalk will be generated.

• Measuring instruments and jigs:	• TV monitor • Small Phillips screwdriver
• Measuring point:	• Player's VIDEO OUT terminal
• Test disc and player mode	• 8-inch LD test disc (GGV1007) • Test Mode (#16,200 and #475 still, TRK servo closed, Tilt servo OFF)
• Positions to be adjusted	• Tilt sensor inclination adjustment screw • VR610 (TILT BAL).

Connection diagram







TV screen display

Note: This display indicates the tilt error display's location. Other displays may differ slightly from the actual.

Adjustment Procedure

1. Search for frame #16,200 on the test disc.
2. Set VR610 to the mechanical center.
3. Adjust the tilt sensor inclination adjustment screw so that the tilt status display code is 6, 7, or 8 on the TV monitor.
4. Search for frame #475.
5. Adjust VR610 so that the tilt error display becomes 7.

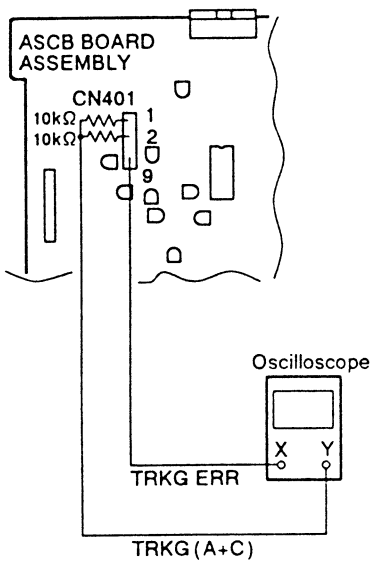
8. SPINDLE MOTOR CENTERING CHECK

Mechanical Adjustment

● Purpose: To check that the center of the spindle motor is on the orbit of the laser beam.

● Measuring instruments and jigs:	● Oscilloscope ● Resistor(10kΩ × 2)
● Measuring point:	● CN401-9(TRKG ERR), CN401-1(TRKG C) and CN401-2(TRKG A)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#100 and #23,800 ● Play mode ● CD test disc(YEDS-7) ● Test Mode(TRKG servo:Open) ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● Check the Lissajous figure.

Connection diagram



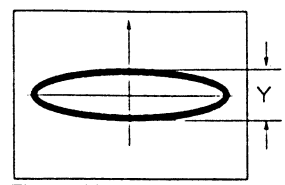


Fig. 1 Lissajous figure of the inner track of the disc(CD)

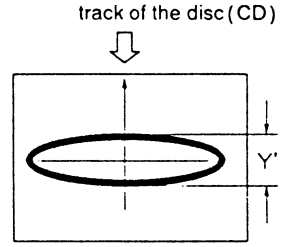


Fig. 2 Lissajous figure of the outer track of the disc(CD)

5. The Y-axis of the Lissajous figure should be the same for the inner and the outer tracks.

Checking Procedure

1. Play the 8-inch LD test disc.
2. Move the pickup to frame #23,800 by scanning or searching, then open the TRKG servo.
3. Connect the X-input (CH-1) of the oscilloscope to CN401-9 and the Y-input (CH-2) to CN401-1 and 2.
   Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG (A+C) signal.
4. Write down the Y-axis amplitudes of the Lissajous figures. (Fig. 1)
5. Close the TRKG servo and search for frame #100, then open the TRKG servo again to observe the Lissajous figure.
   At this time, check that the Y-axis amplitude of the Lissajous figure is the same as that noted in step 4. (Fig. 2)
6. Remove the 8-inch LD test disc from the player, then load the CD test disc and repeat the checking procedures steps 1 to 5. However, it is not necessary to specify the inner or outer track positions of the disc. If the Y-axis amplitude of the Lissajous figure is different for the inner and outer tracks, perform "9. Spindle Motor Centering Adjustment".

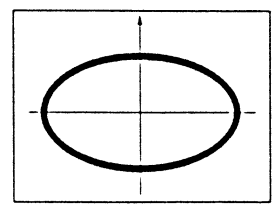


Fig. 3 Lissajous figure when not properly adjusted

9. SPINDLE MOTOR CENTERING ADJUSTMENT

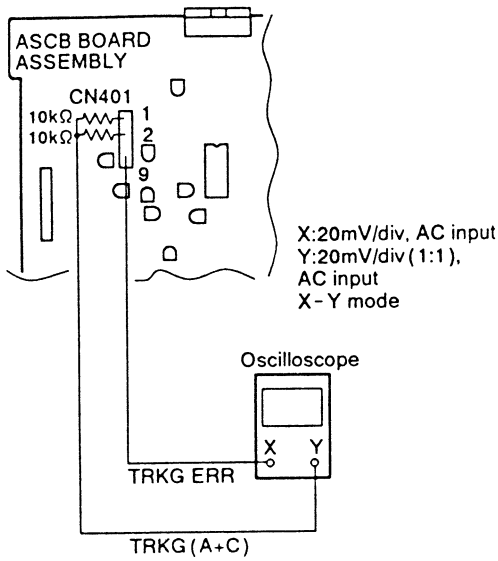
Mechanical Adjustment

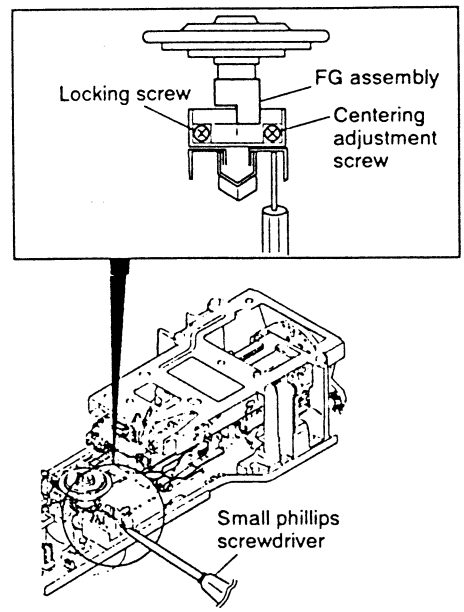
● Purpose: To adjust so that the center of the spindle motor is on the orbit of the laser beam.

● When not properly adjusted: Track skips, or searching takes too long.

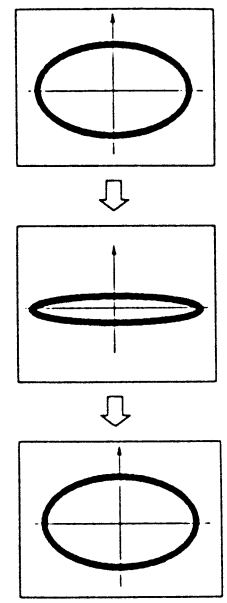
● Measuring instruments and jigs:	● Small Phillips screwdriver ● Oscilloscope ● Resistor(10kΩ×2)
● Measuring point:	● CN401-9(TRKG ERR), CN401-1(TRKG C) and CN401-2(TRKG A)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#100 and #23,800 ● Play mode ● Test Mode(TRKG servo:Open/Close) ● CD test disc(YEDS-7)
● Positions to be adjusted	● The carriage assembly should be in the forward state. ● Spindle motor centering adjustment screw

Connection diagram





7. Adjust the centering adjustment screw.



7. Lissajous figure.

Adjustment Procedure

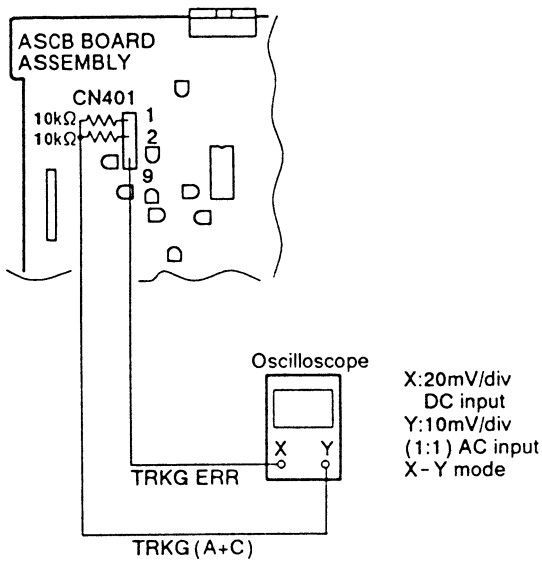
1. Connect the X-input (CH-1) of the oscilloscope to CN401-9 and the Y-input (CH-2) to CN401-1 and 2.
2. Play the 8-inch LD test disc and search for frame #23,800.
3. Open the TRKG servo and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal.
4. Fine-adjust the grating so that the Y-axis amplitude of the Lissajous figure is minimized. (Fig. 2)
5. Close the TRKG servo and search for frame #100.
6. Open the TRKG servo again and observe the Lissajous figure and write the values down. (Fig. 1)
7. Loosen a locking screw and insert the small Phillips-head screwdriver from the adjusting hole, and turn the centering adjustment screw slowly so that the Y-axis amplitude of the Lissajous figure is reduced. After the Y-axis amplitude of the Lissajous figure is minimized, turn the adjusting screw further until the amplitude becomes the same shape as that observed in procedure 6. (Fig. 1-3)
8. Close the TRKG servo, and move the pickup assembly to the outer track of the disc(#23,800), then perform the adjustments in steps 4 to 6 again.
9. Re-open the TRKG servo and observe the Lissajous figure to check that the Y-axis amplitude is minimum. (Fig. 2)
   If the Y-axis amplitude of the Lissajous figure is larger than specified, repeat the adjustment procedure from steps 5 to 8.
10. After adjustment is completed, perform the adjustment in "8. Spindle Motor Centering Check" step 6.
11. Tighten the locking screw.

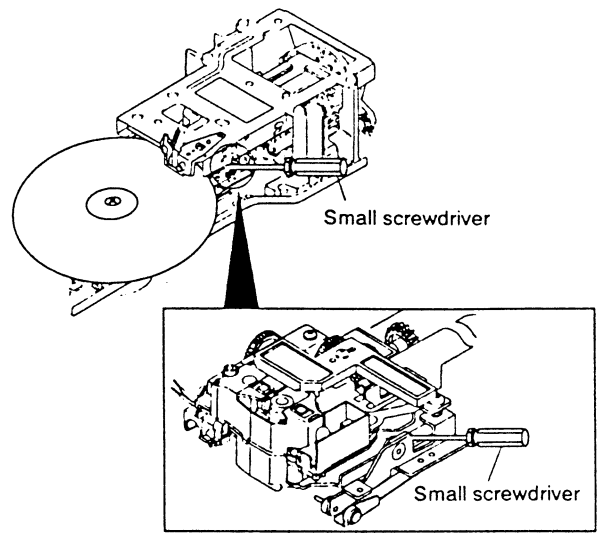
10. FINE GRATING ADJUSTMENT

- Purpose: To fine-adjust the grating so that the two tracking beams for the TRKG servo are projected in the optimum positions on the tracks being played. Set the TRKG servo loop offset voltage to 0V.
- When not properly adjusted: During play, tracks may be skipped.

● Measuring instruments and jigs:	● Oscilloscope ● Small screwdriver ● Resistor(10kΩ×2)
● Measuring point:	● CN401-9(TRKG ERR), CN401-1(TRKG C)and CN401-2(TRKG A)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#6,500 ● Still mode ● Test Mode(TRKG servo:Open) ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● Grating

Connection diagram



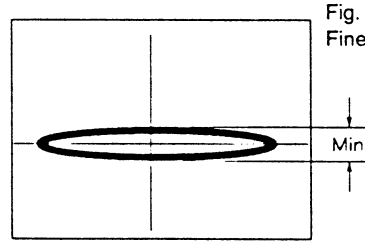


3. Insert the small screwdriver into the grating adjustment hole to fine-adjust it.

Adjustment Procedure

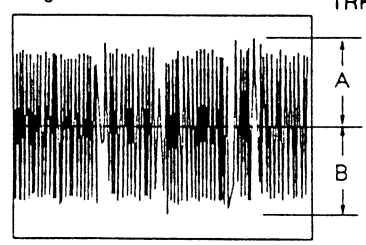
1. Connect the X-input(CH-1)of the oscilloscope to CN401-9 and the Y-input(CH2) to CN401-1 and 2.
2. Play the LD test disc and search for frame #6,500, then open the TRKG servo.
   Set the oscilloscope to the X-Y mode and observe the Lissajous figures of the TRKG error signal and the TRKG sum signal.
3. Insert the small screwdriver into the grating adjustment hole, and fine-adjust the grating so that the Y-axis amplitude of the Lissajous figures is minimized. (Fig. 1)
   If the grating is turned too much and the optimum position can no longer be found, repeat the "2. Coarse Grating Adjustment".
4. Select the oscilloscope's X-input(CH-1) and check that the positive and negative amplitudes of the TRKG error signal are equal. (Fig. 2)
   If they are not, repeat the "2. Tracking Balance Adjustment".
5. Close the TRKG servo and check that the picture(image) on the TV screen is normal.

Fig. 1
Fine grating adjustment



3. Y-axis amplitude of Lissajous figure becomes minimum.

Fig. 2
TRKG balance



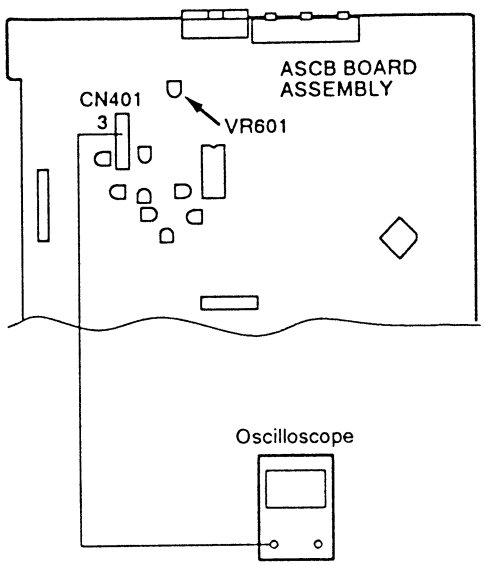
11. RF GAIN ADJUSTMENT

● Purpose: To adjust the RF signal amplitude to the optimum value.

● When not properly adjusted: Dropout occurs frequently.

● Measuring instruments and jigs:	● Oscilloscope
● Measuring point:	● CN401 - 3 (RF signal)
● Test disc and player mode	● 8 - inch LD test disc GGV1007...#15,000 ● Still mode ● Test Mode (TRKG servo:Close) ● Tilt servo : Neutral ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● VR601 (RF LEVEL)

Connection diagram



Adjustment Procedure

1. Play the LD test disc and search for frame #15,000.
2. Connect an oscilloscope to CN401 - 3 (RF signal) and observe the RF signal.
3. Adjust VR601 so that the amplitude of the RF signal becomes 300mV ± 50mV. (Fig. 1)

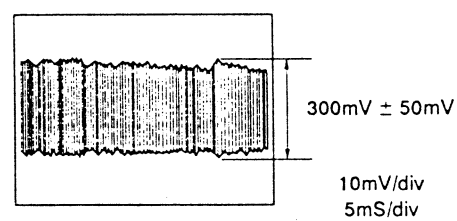


Fig. 1 RF signal

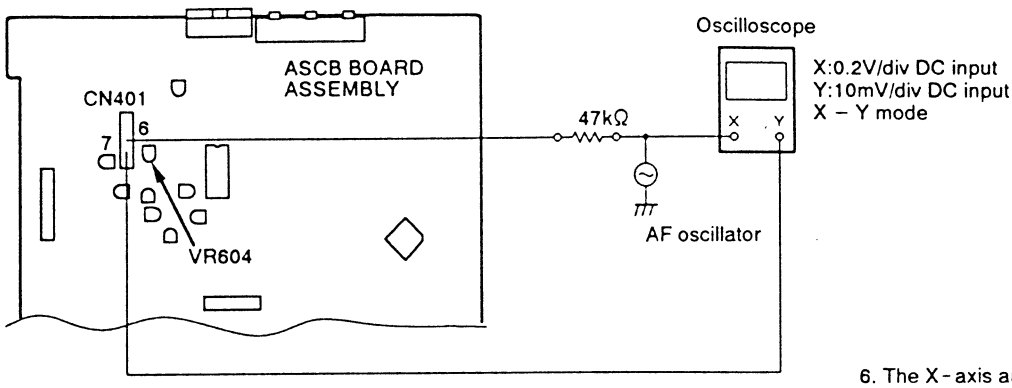
12. FOCUS SERVO LOOP GAIN ADJUSTMENT

Mechanical Adjustment

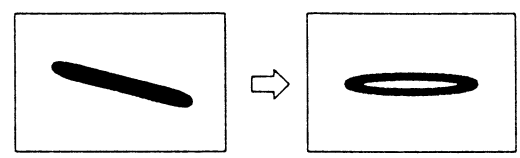
- Purpose: To set the loop gain of the FOCS servo to the optimum value.
- When not properly adjusted: Performance deteriorates.

● Measuring instruments and jigs:	● Oscilloscope ● AF oscillator ● Resistor(47kΩ)
● Measuring point:	● CN401-6(FOCS ERR) and CN401-7(FOCS IN)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#15,000 ● Still mode ● Test mode (TRKG servo:Close) ● Tilt servo : Neutral ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● VR604(FOCS GAIN)

Connection diagram



6. The X-axis and Y-axis of the Lissajous figure are symmetrical.



Adjustment not completed Properly adjusted

Fig. 1

Adjustment Procedure

1. Connect the oscilloscope's X-input(CH-1) and AF oscillator to CN401-6 via the resistor , and the Y-input (CH-2) to CN401-7, as shown in the above diagram.
2. Set the AF oscillator output to 1.7kHz/6Vp-p for GGV1007, according to the test disc used.
3. Play the 8-inch LD test disc and search for frame #15,000.
4. Set the oscilloscope to the X-Y mode and observe the Lissajous figure.
5. Adjust VR604 so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. (Fig. 1)

Note : If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor(47kΩ) in the above diagram, for easier observation of the Lissajous figure. (not below 33kΩ)

13. TRKG SERVO LOOP GAIN ADJUSTMENT

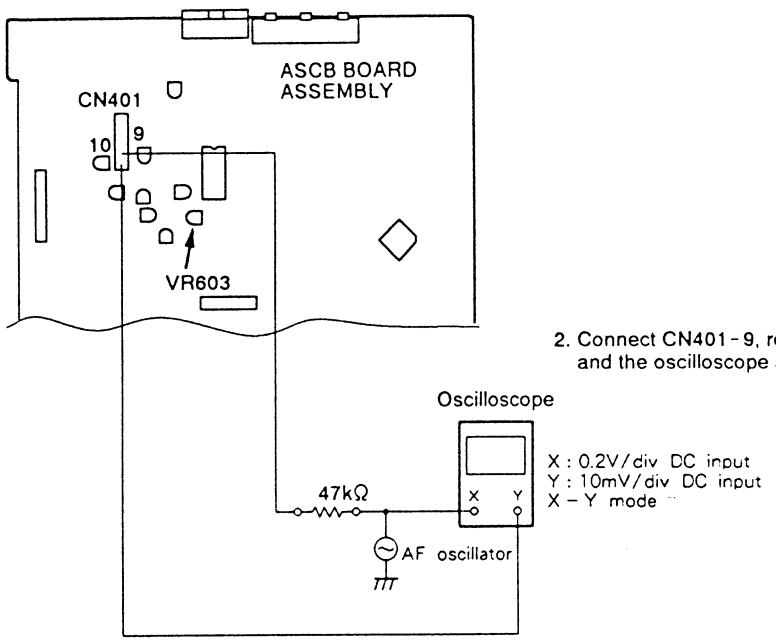
Mechanical Adjustment

● Purpose: To set the loop gain of the TRKG servo to the optimum value.

● When not properly adjusted: Performance deteriorates

● Measuring instruments and jigs:	● Oscilloscope ● Resistor(47kΩ) ● AF oscillator
● Measuring point:	● CN401-9(TRKG ERR), CN401-10(TRKG IN)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#15,000 ● Still mode ● Tilt servo : Neutral ● Test mode (TRKG servo:Close) ● The carriage assembly should be in the forward state.
● Positions to be adjusted	● VR603

Connection diagram



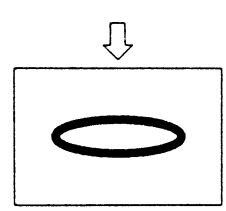
2. Connect CN401-9, resistor, AF oscillator and the oscilloscope as shown.

Adjustment Procedure

1. Play the LD test disc and search frame #15,000.
2. Connect the oscilloscope's X-input(CH-1) and AF oscillator to CN401-9 via the reisitor, and the Y-input (CH-2) to CN401-10, as shown in the above diagram.
3. Set the AF oscillator output to 3.0kHz/6Vp-p for GGV1007, according to the test disc used.
4. Set the oscilloscope to the X-Y mode and observe the Lissajous figure.
5. Adjust VR603 so that the Lissajous figure is symmetrical on both the X-axis and Y-axis of the oscilloscope. (Fig. 1)

Note : If the AF oscillator output does not exceed 6Vp-p, reduce the value of the resistor(47kΩ) in the above diagram, for easier observation of the Lissajous figure. (not below 33kΩ)

Adjustment not completed



Properly adjusted

5. The X-axis and Y-axis of the Lissajous figure are symmetrical.

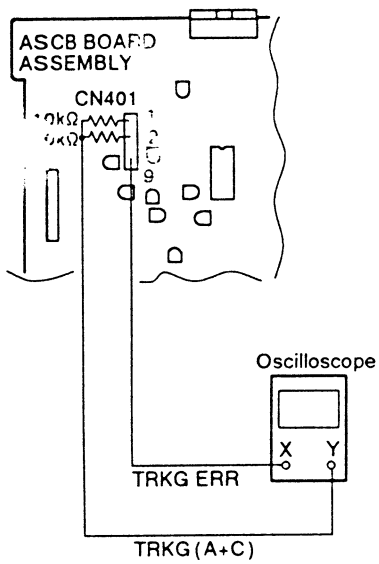
Fig. 1

14. CENTERING ADJUSTMENT FOR SIDE B PLAY

- Purpose: To check that the position check at the start play and to set the center of the spindle motor on the path of the laser beam when playing the side B of the disc.
- When not properly adjusted: Tracks skipped, longer searching time or searching is impossible when playing side B of the disc.

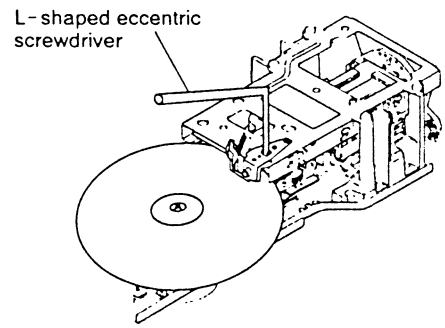
● Measuring instruments and jigs:	● L-shaped eccentric screwdriver(GGV-129) ● Oscilloscope ● Resistor(10kΩ)
● Measuring point:	● CN401-9(TRKG ERR), CN401-1(TRKG C) and CN401-2(TRKG A)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#100 ● Play mode
● Positions to be adjusted	● The carriage assembly should be in the reverse state. ● Test mode (TRKG servo:Open /Close)
	● Centering adjustment hole for side B

Connection diagram



X:20mV/div DC input
Y:10mV/div DC input
X-Y mode

4. Centering adjustment for side B play.



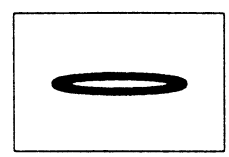


Fig. 1

4. Properly adjusted (X:maximum).

Adjustment Procedure

1. Turn the LD test disc upside-down (change from side A to side B). The start play position from side A to B should be within frame #3,500.
2. Set the oscilloscope to the X-Y mode, and connect the oscilloscope's X-input (CH-1) to CN401-9 (TRKG ERR) and the Y-input (CH-2) to CN401-1 and 2 (TRKG A+C).
3. Play the LD test disc and search for frame #100, then open the tracking servo.

Note: If the center is too eccentric on side B of the disc, since searching will be impossible on side B, open the TRKG servo when the carriage assembly moves to the side B play position and searches around for frame #100.

4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure is minimized (on-track position). Then turn the eccentric screwdriver clockwise further until the X-axis amplitude of the Lissajous figure becomes maximum. (Fig. 1)

Note: When "4. Pickup inclination Adjustment" is performed with the pickup in the forward state, perform "15. Pickup Tangential Direction Angle Adjustment for Side B Play" and "16. Fine Centering Adjustment for Side B Play".

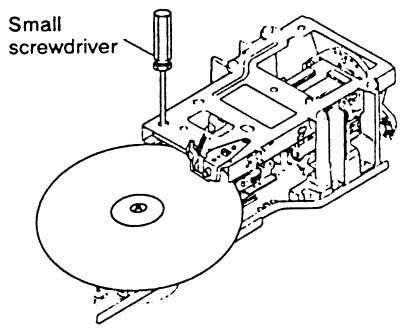
15. PICKUP TANGENTIAL DIRECTION ANGLE ADJUSTMENT FOR SIDE B PLAY Mechanical Adjustment

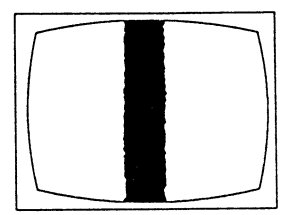
● Purpose: To minimize the crosstalk in the tangential direction angle of the pickup assembly when playing side B of the disc.

● When not properly adjusted: Crosstalk is significant.

● Measuring instruments and jigs:	● TV monitor ● Small Phillips screwdriver
● Measuring point:	● Monitor screen
● Test disc and player mode	● 8-inch LD test disc GGV1007...#475 ● Still mode ● The carriage assembly should be in the reverse state.
● Positions to be adjusted	● Pickup tangential direction angle adjustment screw

Connection diagram





2. Minimum crosstalk

Adjustment Procedure

1. Play the LD test disc and search for frame #475.
2. Check if crosstalk appears on the screen of the TV monitor, and adjust the pickup tangential direction angle adjustment screw so that the crosstalk is minimized.
3. After steps 1 and 2 have been completed, perform "14. Centering Adjustment for Side B Play" again.

Note: When the pickup tangential direction angle for side B play is varied by this adjustment, the center of the disc for side B may be shifted slightly. As a countermeasure, perform the centering adjustment again.

16. FINE CENTERING ADJUSTMENT FOR SIDE B PLAY

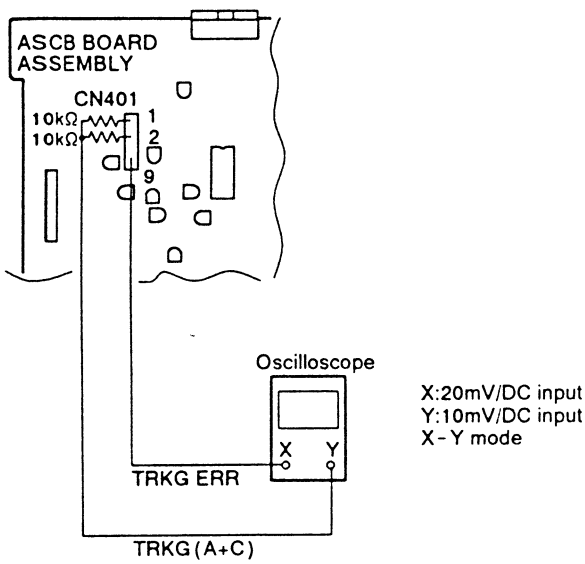
Mechanical Adjustment

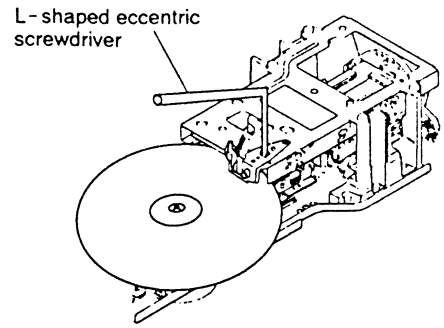
● Purpose: To set the center of the spindle motor on the track of the laser beam when playing the side B of the disc.

● When not properly adjusted: Tracks skipped when playing side B of the disc.

● Measuring instruments and jigs:	● Oscilloscope ● L-Shaped eccentric screwdriver(GGV-129) ● Resistor (10kΩ × 2)
● Measuring point:	● CN401-9(TRKG ERR), CN401-1(TRKG C) and CN401-2(TRKG A)
● Test disc and player mode	● 8-inch LD test disc GGV1007...#100 ● Test mode (TRKG servo: Open)
● Positions to be adjusted	● Play mode ● The carriage assembly should be in the reverse state. ● Centering adjustment hole for side B

Connection diagram





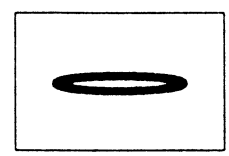


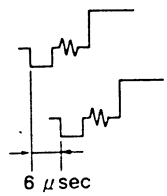
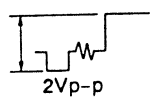
Fig. 1

4. X-axis of Lissajous figure maximum.

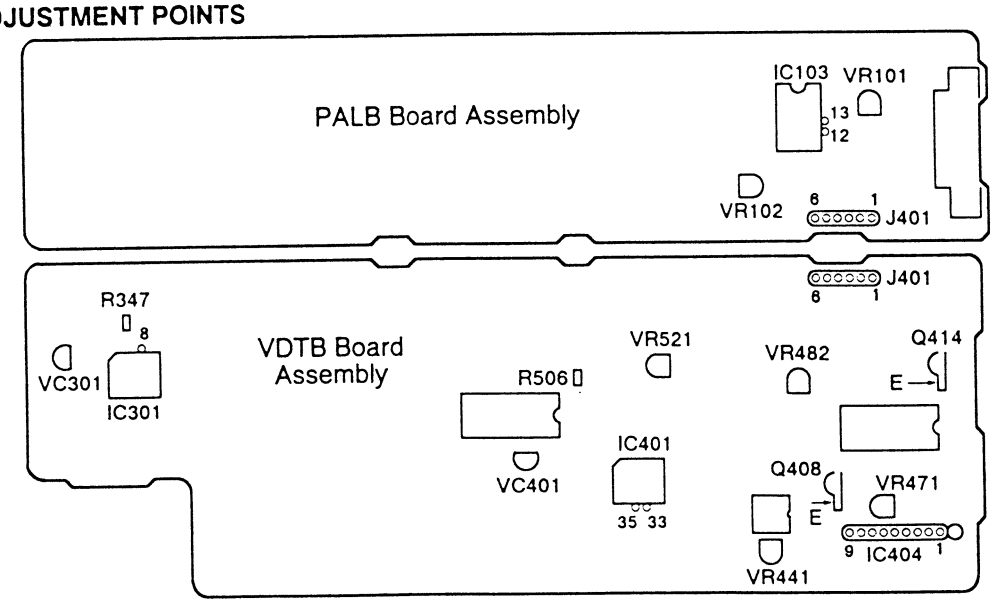
Adjustment Procedure

1. Set the oscilloscope to the X-Y mode, and connect the oscilloscope's X-input (CH-1) to CN401-9 (TRKG ERR) and the Y-input (CH-2) to CN401-1 and 2(TRKG A+C).
2. Play the LD test disc and search for frame #100.
3. Open the TRKG servo.
4. While observing the Lissajous figure on the oscilloscope, insert the eccentric screwdriver into the centering adjustment hole for side B and adjust it so that the X-axis amplitude of the Lissajous figure becomes maximum. (Fig. 1)
5. Turn the power OFF.
6. Fix and lock the following screws;
   Grating screw
   Spindle motor centering adjustment screw
   Pickup tangential direction angle adjustment screw
   Centering adjustment hole for side B
   Tilt sensor screw
   Shaft plate (upper)

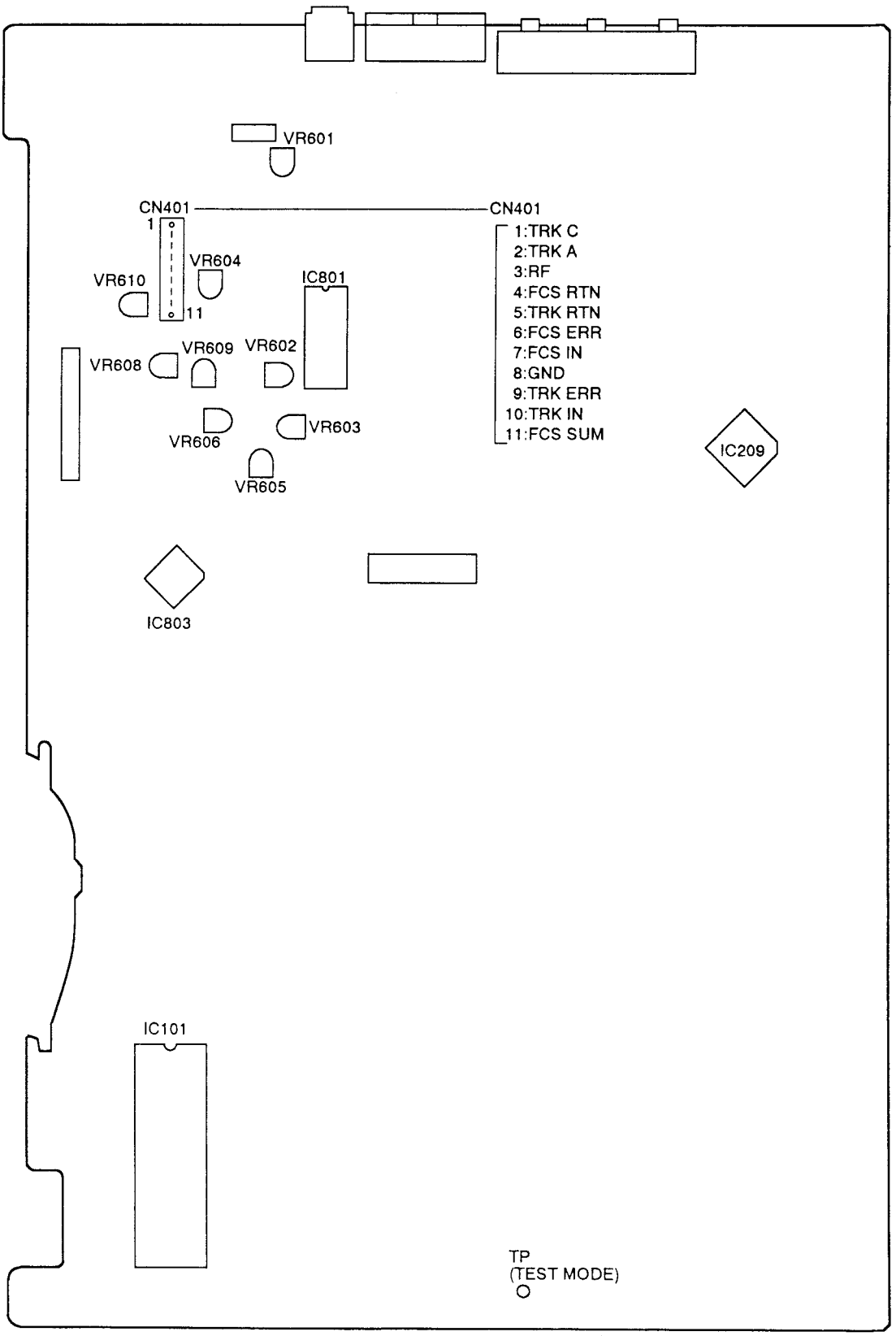
7.4.4 ELECTRICAL ADJUSTMENTS

	Adjustment	Adjusting Point	Adjusting Specifications	Inspection Standard	Remarks
	VDTB Board Assembly				
1	Sync-generator Clock Adjustment	VC401	Adjust VC401 for 17.734475MHz at the OPEN side of R506.	17.734475MHz ± 100Hz	
2	REF Clock Adjustment	VC301	Adjust for 3.5546875MHz at pin 8 (R347) of IC301. Or, adjust so that 1H of the PB video spans 10 seconds longer than that of the reference video signal.	3.5546875MHz ± 25Hz 15.6250kHz ± 0.1Hz	
3	VCO Center Frequency Adjustment	VR471	 Adjust VR471 so that the time lag between CCD input video (Q408 emitter) and the CCD output video (Q414 emitter) becomes 70 μsec (1H + 6 μsec). For this adjustment, connect pin 9 of IC404 to GND.	70 μsec ± 1.4 μsec	
4	Video Level Adjustment	VR482	 Adjust the 100 % white video level to 2 Vp-p at VIDEO OUT (J401, pin 6).	2Vp-p ± 5%	
5	1H Delay Video Level Adjustment	VR441	Adjust VR441 so that the level of the 1H-delay video at pin 33 of IC401 becomes the same as that of the main-line video pin 35.	Main-line video ± 3%	
6	VPS ERR Level Adjustment	VR521	While observing the magenta screen on a vector scope, minimize the jitter at VIDEO OUT (J401, pin 6).		
	PALB Board Assembly				
7	MOD Video Level Adjustment	VR102	Adjust VR102 so that the luminance level of the MOD video at pin 13 of IC103 becomes the same as that of the through video at pin 12.	± 3%	
8	1H Delay S.C. Level Adjustment	VR101	While observing color bars in still mode on a vector scope, minimize the gain variation at VIDEO OUT (J401, pin 6).		

- **ADJUSTMENT POINTS**



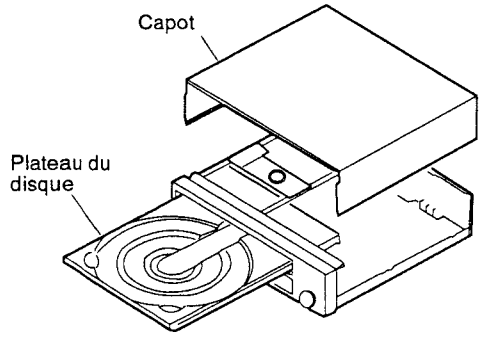
7.2 POINTS DE RÉGLAGE DE L'ENSEMBLE ASCB



7.3 MODE D'ESSAI

7.3.1 MODE D'ESSAI

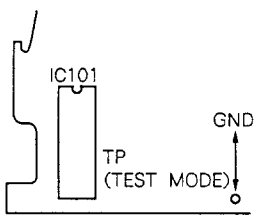
Le lecteur possède une fonction Mode d'essai, permettant au réparateur de vérifier l'état de l'appareil sur l'écran TV par exécution d'opérations sur les touches respectives.
De plus, comme l'asservissement TRK s'ouvre et se ferme facilement, le mode d'essai est particulièrement pratique pour les ajustements mécanismes.



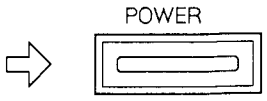
7.3.2 PASSAGE EN MODE D'ESSAI

[Démarche]

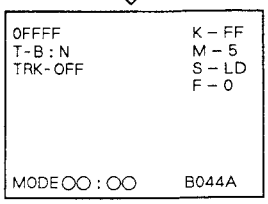
1. Déposer le capot et le plateau du disque.
2. Raccorder TP (TEST MODE) de l'ensemble ASCB à GND (masse).
3. Allumer l'interrupteur d'alimentation.
4. Débrancher TP et GND (masse).



Raccorder TP sur GND.



Allumer l'interrupteur d'alimentation.



Ecran du téléviseur

7.3.3 ANNULATION DU MODE D'ESSAI

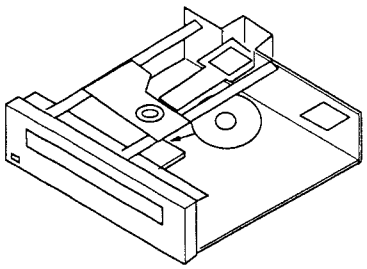
Couper l'interrupteur d'alimentation.

7.3.4 FONCTIONNEMENT DU LECTEUR EN MODE D'ESSAI

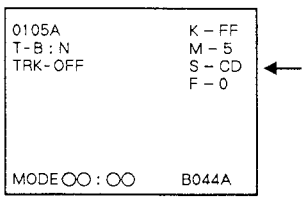
Faire fonctionner le lecteur en choisissant une fonction du mode d'essai par les touches du lecteur ou de la télécommande.

- Lecture d'un CD

① Placer un disque CD sur le plateau. (La bride est déjà relevée.)



② Appuyer sur ◀◀ ou ▶▶ pour obtenir "S-CD" sur l'écran du téléviseur.

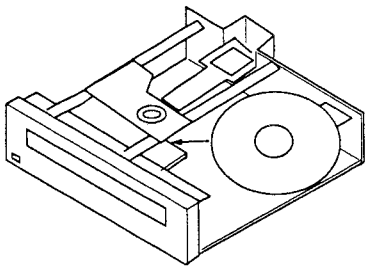


Ecran du téléviseur

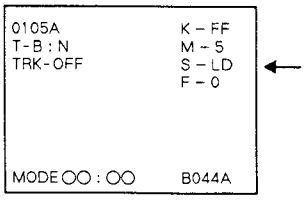
③ Immobiliser le disque en appuyant une fois sur la touche PLAY (▶). Appuyer ensuite deux fois sur la touche PLAY (▶) et le disque sera reproduit normalement.

- Lecture d'un LD

① Placer un disque LD sur le plateau. (La bride est déjà relevée.)



② Appuyer sur ◀◀ ou ▶▶ pour obtenir "S-LD" sur l'écran du téléviseur.



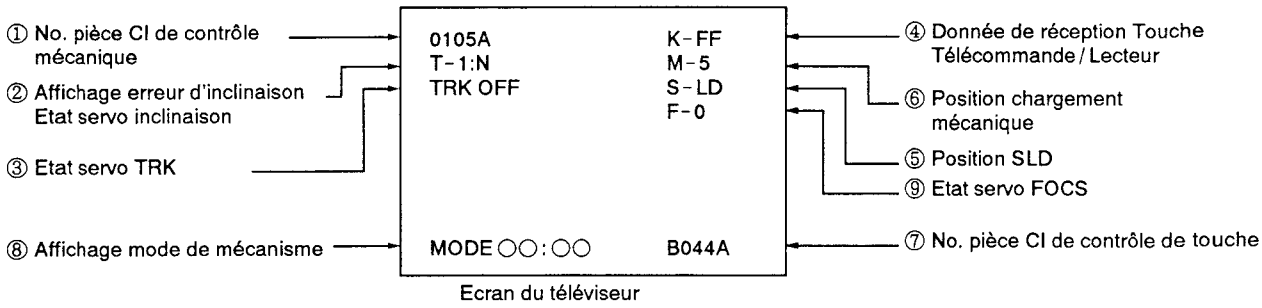
Ecran du téléviseur

③ Immobiliser le disque en appuyant une fois sur la touche PLAY (▶). Appuyer ensuite deux fois sur la touche PLAY (▶) et le disque sera reproduit normalement.

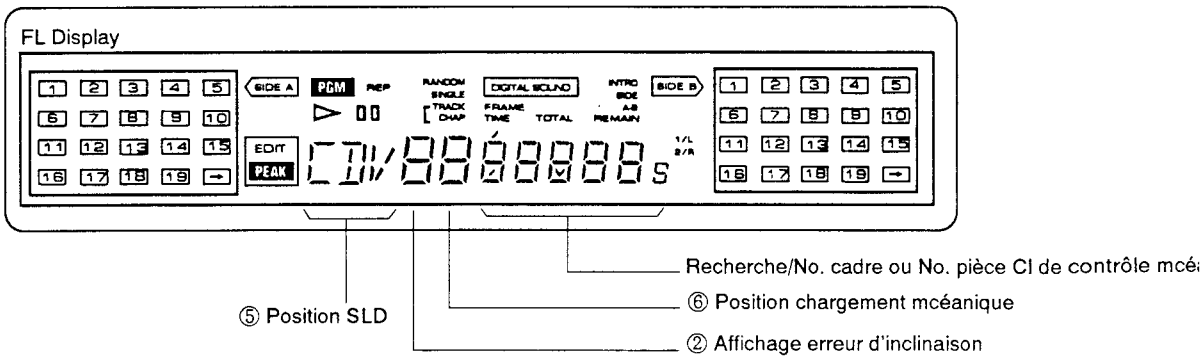
Tableau : Démarches en mode d'essai

Fonction	Etat du lecteur	Touche utilisée	Remarques
Ouverture plateau	Mode STOP	▲	
Fermeture plateau	Plateau ouvert	▲	
Arrêt	Mode PLAY	■	
Lecture	Placement de disque et plateau fermé.	▶	• Lancer la lecture avec servo TRK ouvert. • Lancer la lecture avec inclinaison au neutre. • Le type de disque (LD/CD/CDV) est déterminé quand la lecture commence à la position SLDR.
Servo TRK Ouverture/Fermeture	Mode PLAY	▶	• A chaque poussée sur la touche PLAY (▶), le servo TRK s'ouvre ou se ferme alternativement.
Fixe	Mode PLAY Servo TRK fermé.	II	• A chaque poussée sur la touche PAUSE (II), le lecteur passe alternativement entre les modes PLAY et STILL.
SLDR REV SCAN	Mode PLAY	◀◀	• Sens anti-horaire • Avec le servo TRK ouvert, le capteur peut être endommagé sur le SLD se déplace plus à l'intérieur que la zone d'amorce du disque. Ne pas laisser le SLD dépasser la zone d'amorce vers l'intérieur du disque.
SLDR FWD SCAN	Mode PLAY	▶▶	• Sens horaire • Avec le servo TRK ouvert, le capteur peut être endommagé sur le SLD se déplace plus à l'extérieur que la zone d'amorce du disque. Ne pas laisser le SLD dépasser la zone d'amorce vers l'extérieur du disque.
TILT Neutre	Interrupteur POWER allumé	EDIT	
TILT Servo ON	Mode PLAY	RANDOM PLAY	
TILT Moins TILT Servo OFF	Mode PLAY	I◀◀	• Maintenir les touches enfoncées.
TILT Plus TILT Servo OFF	Mode PLAY	▶▶I	• Maintenir les touches enfoncées.
Ecran d'affichage ON/OFF	Interrupteur POWER allumé	Touche PGM	
Recherche de cadre	Mode PLAY	Touche +10 ↓ Touche 0-9 ↓ ▶	• En mode PLAY, appuyer sur la touche +10 (Le lecteur se met en attente de l'entreé du No. de cadre.) • Se servir des touches numériques (0 – 9) pour entrer le numéro de cadre, puis appuyer sur la touche PLAY du lecteur pour la recherche. • A la fin de la recherche, le lecteur repasse au mode d'avant la recherche.
Moteur de chargement Rotation dans le sens horaire ou anti-horaire	Plateau ouvert	▶▶I I◀◀	• FWD: Déchargement • REV : Chargement
FOCS OFFSET (CT BEST) Vérification VR606	Mode PLAY (Servo TRK ouvert)	(Télécommande) MULTI-SPEED FWD →F-1 REV →F-0 (Lecteur) INTRO SCAN	VR606 et VR605 : Pour vérification F – 0 : Mode normal•••••••••fermeture de TRKG : VR606 (CT BEST) ouverture de TRKG : VR605 (TE BEST) F – 1 : VR606 est actualise à l'ouverture TRKG.

7.3.5 ECRAN DU TÉLÉVISEUR ET AFFICHAGES EN MODE D'ESSAI



Ecran du téléviseur



① Le No. de piéce (ensemble ASCB) CI de contrôle mécanique sera affiché.

PD0105A1 → 0105A

② Etat servo inclinaison/Affichage erreur d'inclinaison

T-○:○○

- Etat servo d'inclinaison : N... Neutre
  ON... Servo ON
  OFF... Servo OFF
- Affichage erreur inclin : 0 Inclinaison −
  ↕ Neutre
  F Inclinaison +

③ Etat servo TRK

Ecran du téléviseur

TRK-○○○

└—ON...Servo TRK fermé

OFF...Servo TRK ouvert

④ Donneé de réception Touche Télécommande / Lecteur

Ecran du téléviseur

K-○○

└— Voir tableau ci-après.

Code	Fonction	Code	Fonction	Code	Fonction	Code	Fonction
00	0	20	F JOG0	40	(CHAP / TRK)	60	
01	1	21	F JOG1	41	(FRAM / TIM)	61	
02	2	22	F JOG2	42	(SEARCH)	62	
03	3	23	F JOG3	43	DISPLAY	63	
04	4	24	R JOG0	44	REPEAT B	64	
05	5	25	R JOG1	45	CLEAR	65	
06	6	26	R JOG2	46	SPEED –	66	
07	7	27	R JOG3	47	SPEED +	67	
08	8	28		48	REPEAT A	68	
09	9	29		49	(2 / R)	69	
0A	VOLUME +	2A		4A	(STEREO)	6A	
0B	VOLUME –	2B		4B	(1 / L)	6B	
0C	DGT / ANL	2C		4C	PROGRAM	6C	
0D		2D		4D		6D	PLAY /PAUSE
0E	CX ON/OFF	2E		4E		6E	STOP
0F	(TV / LDP)	2F		4F		6F	OPEN / CLOSE
10	(F-SCAN)	30		50	F-STEP	70	
11	(R-SCAN)	31		51		71	DIRECT CD
12		32		52	F-SKIP	72	PEAK
13	CHAP / FRME	33		53	R-SKIP	73	SINGLE
14		34		54	R-STEP	74	
15		35		55	R-MULT	75	
16	STOP / OPEN	36		56		76	
17	PLAY/SERCH	37	DGT LEVEL	57		77	
18	PAUSE	38		58	F-MULT	78	
19		39		59		79	
1A	(POW ON)	3A		5A	HILIT / INTR	7A	
1B	(POW OFF)	3B		5B		7B	
1C	POW ON/OFF	3C		5C		7C	
1D	EDIT	3D		5D		7D	
1E	AUDIO	3E		5E	RNDM (TEST)	7E	
1F	+10	3F		5F	(ESC)	7F	

⑤ Position SLD

Ecran du téléviseur

S-○○○

└— IN ... CD intérieur SW ON

CD ... Zone active de CD

CDV ... Zone active de CDV

LD ... Zone active de LD

⑥ Position de chargement mécanique

Ecran du téléviseur

M-○

└— 0 ... Plateau ouvert

1 ... Chargement

2 ... Attente

3 ... Verrouillé

5 ... Inclinason moin

6 ... Inclinaison neutre (un côté)

7 ... Inclinaison plus

8 ... Limite d'inclinaison

9 ... Côté B verrouillé (deux côtés)

⑦ Etat VR décalage de mise au point

Ecran du téléviseur

F-○

└— 0 ... Mode normal

•A la fermeture de servo TRK, VR606 (CT BEST) est actualisé.

•A l'ouverture de servo TRK, VR605 (TE BEST) est actualisé.

1 ... A l'ouverture de servo TRK, VR606 (CT BEST) est aussi actualisé.

7.4 RÉGLAGES

7.4.1 OUTILS ET INSTRUMENTS DE RÉGLAGE

- Petit tournevis (environ 10cm de long)
- Petit tournevis cruciforme
- Clés hexagonales (2mm et 2,5mm)
- Oscilloscope double faisceau (avec retard)
- Oscillateur audiofréquence (AF)
- Compteur de fréquence
- Disque d'essai LD (GGV1007)
- Disque LDD (acheter dans le commerce)
- Disque d'essai CD (YEDS-7)
- Pince coupe-circuit
- Tournevis excentrique en L (GGV-129)
- Tournevis cruciforme
- Résistance (47kΩ , 10kΩ × 2)
- Filtre passe-bas(47kΩ +1 μF)
- Voltmètre numérique

7.4.2 PREPARATIFS POUR LES RÉGLAGES ET PRECAUTIONS

1) Ajuster la hauteur de la table de lecture au moment de remplacer le moteur à broche.

2) Lecture de la face B

La lecture directe de la face B est possible par l'action de la touche SIDE B sur le panneau avant.

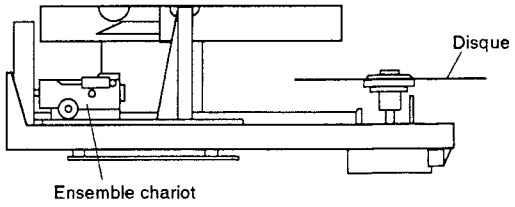
3) Disque d'essai

Le disque d'essai LD utilisé pour le réglage mécanique et le réglage de l'ensemble carte mère peut être le même GGV1007. Les numéros d'image donnés dans le texte sont pour le GGV1007.

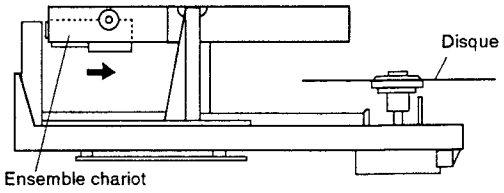
4) Les numéros donnés dans les schémas de connexion correspondent aux numéros des étapes de la procédure de réglage.

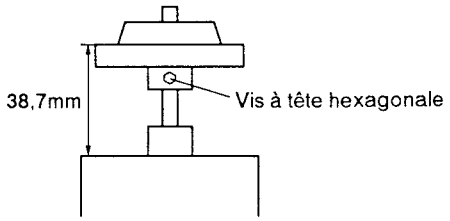
5) Les numéros d'image ne sont pas affichés sur le moniteur TV. Veuillez lire l'affichage FL.

Etat de lecture avant de l'ensemble chariot



Etat de lecture arrière de l'ensemble chariot





Desserrer la vis à tête hexagonale et mesurer la hauteur à l'aide d'un compas d'épaisseur, puis revisser la vis.

Réglage de la hauteur de la table de lecture

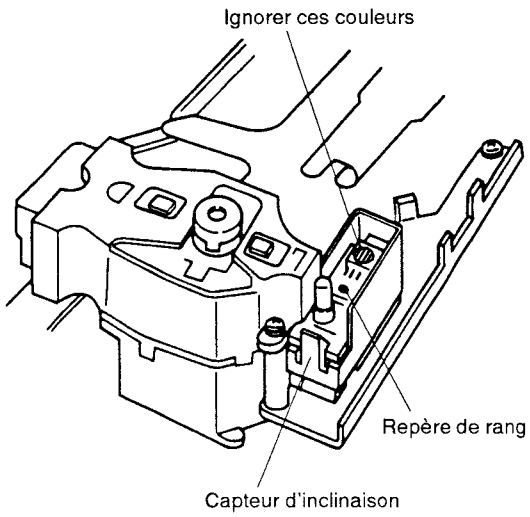
7.4.3 RÉGLAGES MÉCANIQUES

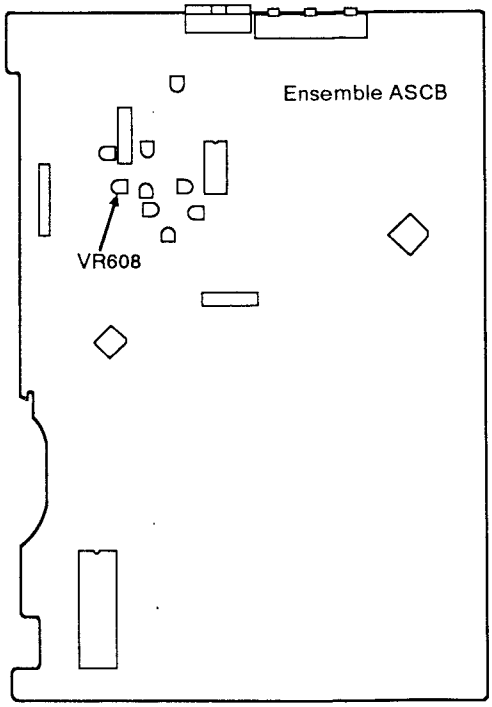
1. RÉGLAGE DE GAIN D'INCLINAISON

- Objet : Ajuster le gain d'inclinaison en fonction du rang de sensibilité du capteur d'inclinaison.
- En cas de mauvais réglage : Augmentation des oscillations d'inclinaison et de la diaphonie.

• Instruments de mesure et calibres: • Point de mesure: • Disque d'essai et mode du lecteur:	• Petit tournevis
• Positions à ajuster:	• VR608 (TILT GAIN)

Schéma de connexion





Procédure de Réglage

1. Se servir du tournevis pour ajuster l'angle de VR608 sur l'ensemble ASCB en fonction de la couleur de l'indicateur de rang.

Rang	Couleur	Angle VR
A	Rouge	A fond dans le sens horaire
B	Clair	Centre mécanique
C	Bleu	A fond dans le sens anti-horaire

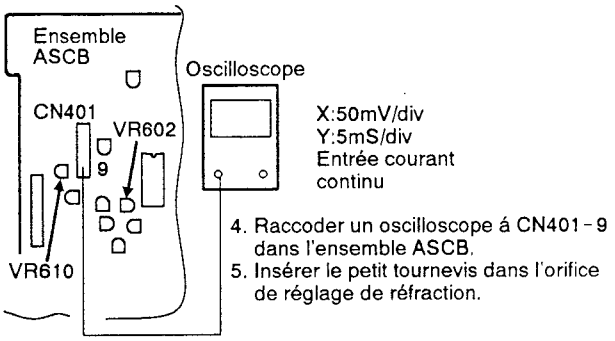
2. RÉGLAGE APPROXIMATIF DE RÉFRACTION ET D'EQUILIBRE D'ALIGNEMENT (TRKG)

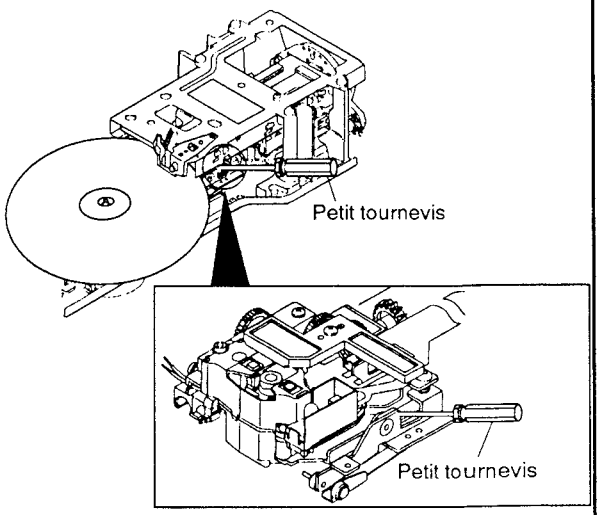
Réglages Mécaniques

- Objet : Réglage du faisceau laser, qui est divisé en trois par la réfraction, sur la position optimale sur la piste. Régler la tension offset de boucle d'asservissement TRKG sur 0V.
- En cas de mauvais réglage : La lecture du disque est impossible. Saut de piste pendant la lecture.

• Instruments de mesure et calibres:	● Petit tournevis ● Oscilloscope
• Point de mesure:	● CN401 - 9 (TRKG ERR)
• Disque d'essai et mode du lecteur:	● Disque d'essai LD de 8 pouces (GGV1007)...#6,500 ● Mode d'essai (boucle d'asservissement TRKG:ouverte) ● L'ensemble chariot doit être en état de lecture avant.
• Positions à ajuster:	● Réfraction ● VR602 (TRKG BAL).

Schéma de connexion





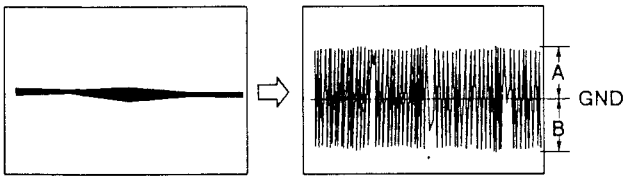


Fig. 1 Position "point nul"

Fig. 2 Amplitude maximale A=B

Procédure de réglage

<Réglage approximatif de réfraction>

1. Reproduire le disque d'essai LD.
2. Rechercher l'image #6,500.
3. Ouvrir la boucle d'asservissement TRKG. (Voir section 7.3.)
4. Raccorder un oscilloscope à CN401 - 9 et observer la forme d'onde.
5. Insérer le petit tournevis dans l'orifice de réglage de réfraction. Le réglage de réfraction vous permet de faire varier l'amplitude de la forme d'onde d'erreur TRKG. Trouver la position où l'amplitude de la forme d'onde est minimale avec un enveloppe douce. (Fig. 1)
   (Ceci indique que les faisceaux laser divisés en trois sont dirigés sur la piste. C'est la position "point nul".)
6. Tourner lentement le tournevis dans le sens antihoraire à partir de la position "point nul" jusqu'à ce que l'amplitude de la forme d'onde soit maximale. (Fig.2.)
7. Fermer la boucle d'asservissement TRKG et vérifier qu'une image normale est affichée sur l'écran du téléviseur.

<Réglage d'équilibre TRKG>

1. Aligner la position GND de l'oscilloscope de manière qu'elle arrive au centre de l'écran de l'oscilloscope.
2. Ajuster VR602 de manière que les amplitudes positive et négative de la forme d'onde d'erreur TRKG soient égales. (Fig. 2)

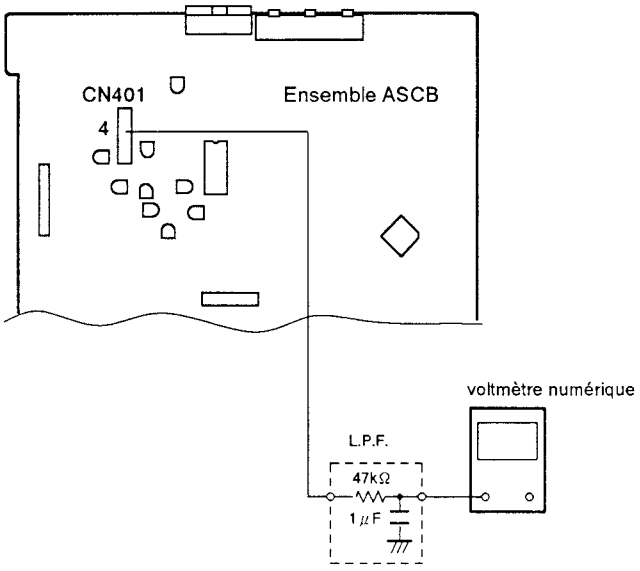
Remarque:Si le réglage de VR602 ne change pas l'alignement, effectuer l'ajustement après avoir réglé VR610 sur le centre mécanique.

3. RÉGLAGE HORIZONTAL D'AXE COULISSANT (SLDR)

- Objet : Positionner l'axe coulissant horizontalement pour que le capteur puisse se déplacer horizontalement sur le disque.
- En cas de mauvais réglage : Avec un disque voilé, le servomoteur FOCS ne fonctionne pas au centre et à la périphérie du disque.

• Instruments de mesure et calibres:	• Voltmètre numérique • Filtre passe-bas (47k Ω + 1 μF)
• Point de mesure:	• CN401 - 4 (FCS RTN) et GND
• Disque d'essai et mode du lecteur:	• Disque d'essai LD de 8 pouces (GGV1007) • Mode d'essai (#9,800/#23,800,boucle d'asservissement TRKG:ouverte, servomoteur d'inclinaison OFF)
• Positions à ajuster:	• Touche SKIP du lecteur (pendant le mode d'essai)

Schéma de connexion



Procédure de réglage

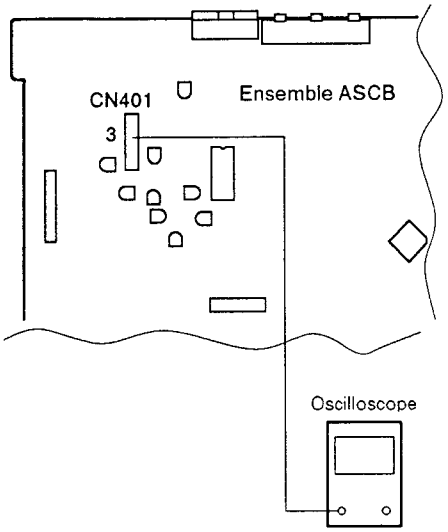
1. Raccorder un voltmétre numérique à CN401 - 4 via L.P.F.
2. Ouvrir la boucle d'asservissement TRKG et rechercher l'image #9,800.
3. Vérifier la tension.
4. Rechercher l'image #23,800 et vérifier que la tension est la même qu'à l'image #9,800. Si elle est différente, régler la touche SKIP de manière que la tension soit la même qu'à l'image #9,800.

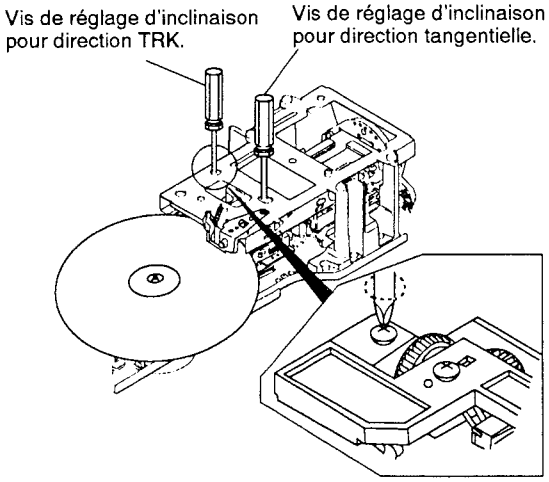
4. RÉGLAGE D'INCLINAISON DE CAPTEUR

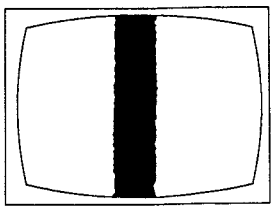
- Objet : Régler l'inclinaison du capteur de sorte que le faisceau laser soit dirigé verticalement par rapport au disque.
- En cas de mauvais réglage : Production de diaphonie.

• Instruments de mesure et calibres:	• Moniteur TV • Tournevis cruciforme • Oscilloscope
• Point de mesure:	• CN401 - 3 (RF)
• Disque d'essai et mode du lecteur:	• Disque d'essai LD de 8 pouces (GGV1007) • Mode d'essai (Image fixe au #2,251, écran noir),Servo d'inclinaison OFF
• Positions à ajuster:	• Alignement d'ensemble capteur / Vis de réglage d'inclinaison tangentielle

Schéma de connexion







Diaphonie minimum

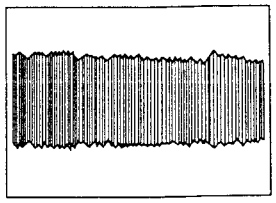


Fig. 1 Forme d'onde RF

Procédure de réglage

1. Raccorder l'oscilloscope sur CN401 - 3.
2. Rechercher le cadre #2,251 et observer la forme d'onde RF.
3. Agir sur la vis de réglage TRK du capteur/inclinaison en direction tangentielle pour maximaliser l'amplitude de la forme d'onde.
4. Observer l'écran du téléviseur et confirmer qu'il n'y a pas de diaphonie.

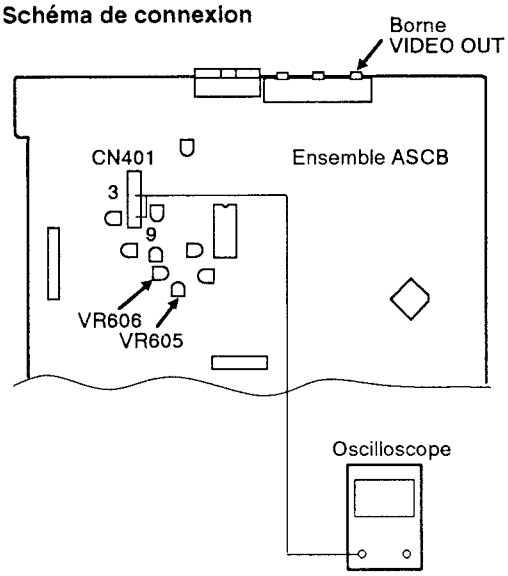
Remarque : Si une diaphonie est constatée sur l'écran même quand le niveau RF est au maximum, effectuer les étapes suivantes.

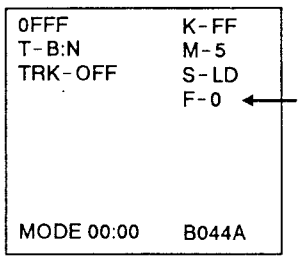
5. RÉGLAGE ERREUR D'ALIGNEMENT/DIAPHONIE OPTIMALE

- Objet : Ajuster la mise au point à l'état optimal à la lecture normale et lors du saut de plage (recherche).
- En cas de mauvais réglage : Production de diaphonie.

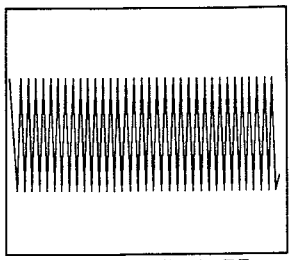
• Instruments de mesure et calibres:	• Moniteur TV • Oscilloscope
• Point de mesure:	• CN401 - 3 (RF) • CN401 - 9 (TRK ERR) • Borne VIDEO OUT du lecteur
• Disque d'essai et mode du lecteur:	• Disque d'essai LD de 8 pouces (GGV1007) • Mode d'essai (ouverture / fermeture servo TRK, Servo d'inclinaison OFF)
• Positions à ajuster:	• VR605 (TE BEST) • VR606 (CT BEST)

Schéma de connexion

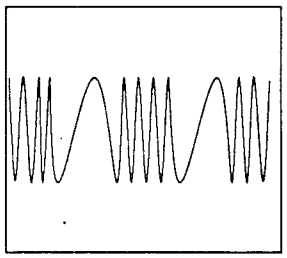




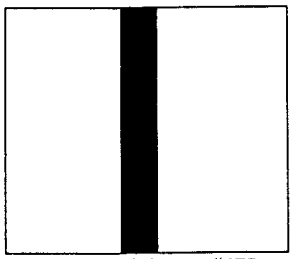
Affichage d'écran du mode d'essai



Régler sur l'amplitude RF maximum au cadre #2,251.



Maximiser l'erreur TRKG (alignement).



Diaphonie minimum #475

Procdéure de réglage

Remarque : Effectuer ce réglage si une diaphonie considérable est constatée sur l'écran à la section 4 "Réglage d'inclinaison de capteur".

1. Raccorder l'oscilloscope sur CN401 - 9.
2. Ouvrir le servo TRKG.
3. Confirmer que l'affichage d'écran du mode d'essai est F-0. Dans la négative, régler la touche MULTI - SPEED REV de la télécommande sur F-0.
4. Ajuster VR605 de sorte que l'amplitude de la forme d'onde d'erreur TRKG devienne maximale.
5. Refermer le servo TRKG.
6. Raccorder l'oscilloscope sur CN401 - 3.
7. Appuyer sur la touche MULTI - SPEED FWD de la télécommande pour afficher "F-1" sur l'écran du téléviseur.
8. Rechercher le cadre #2,251 et ajuster VR606 de sorte que l'amplitude de la forme d'onde RF devienne maximale.
9. Confirmer que la diaphonie sur l'écran du téléviseur devient minimale au cadre #475.

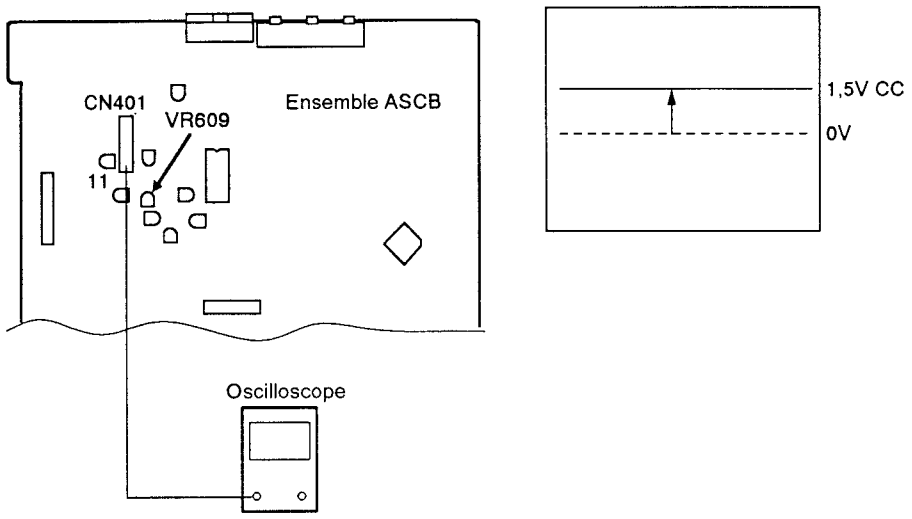
Remarque : Une fois le réglage terminé, veiller à effectuer "6. Réglage de niveau FOCS SUM".

6. RÉGLAGE DE NIVEAU FOCS SUM

- Objet : Régler le niveau de la somme (FCS A+C) de B1– B4 à la valeur optimale pour actualiser le servo FOCS (mise au point).
- En cas de mauvais réglage : Dégradation de la possibilté de lecture.

• Instruments de mesure et calibres:	• Moniteur TV • Oscilloscope
• Point de mesure:	• CN401 - 11(FCS SUM)
• Disque d'essai et mode du lecteur:	• Disque d'essai LD de 8 pouces (GGV1007)...#15,000 • Mode fixe • Mode d'essai(boucle d'asservissement TRKG:fermeé) • Servomoteur d'inclinason:meutre
• Positions à ajuster:	• VR609(FCS SUM)

Schéma de connexion



Procdéure de réglage

Remarque : Effectuer ce réglage après avoir exécuté "5. Réglage Erreur d'alignement / Diaphonie optimale".

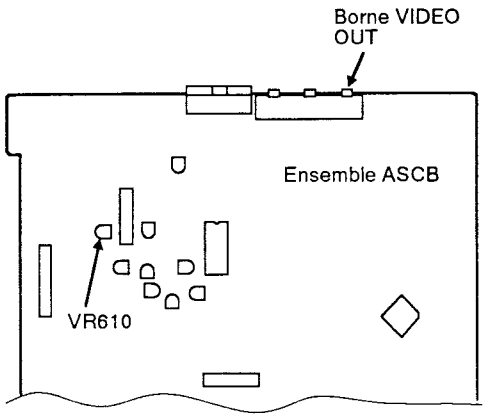
1. Raccorder l'oscilloscope sur CN401 - 11.
2. Ajuster VR609 de sorte que la tension deviennt 1,5 V CC.

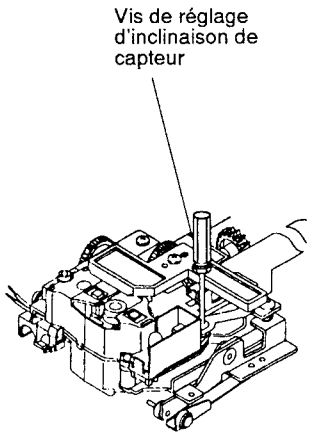
7. RÉGLAGE INCLINAISON DE CAPTEUR/BALANCE D'INCLINAISON

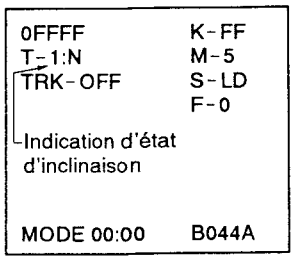
- Objet : Régler l'inclinaison du capteur afin de diriger verticalement la diode LED du capteur d'inclinaison par rapport au disque. Egalement, compenser la différence de sensibilité entre les deux capteurs.
- En cas de mauvais réglage : Production de diaphonie

• Instruments de mesure et calibres:	• Moniteur TV • Petit tournevis cruciforme
• Point de mesure:	• Borne VIDEO OUT du lecteur
• Disque d'essai et mode du lecteur:	• Disque d'essai LD de 8 pouces (GGV1007) • Mode d'essai (image fixe sur #16,200/#475, servo TRK fermé servo d'inclinaison OFF)
• Positions à ajuster:	• Vis de réglage d'inclinaison de capteur • VR610 (TILT BAL).

Schéma de connexion







Affichage d'écran TV

Remarque:
L'affichage indique l'endroit d'affichage de l'erreur d'inclinaison. Les autres affichages peuvent différer légèrement de l'affichage réel.

Procédure de réglage

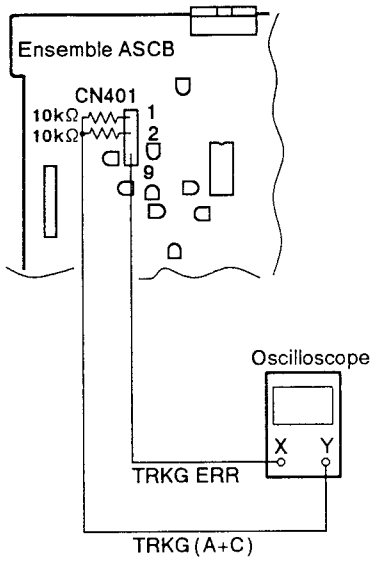
1. Rechercher le cadre #16,200 sur le disque d'essai.
2. Régler VR610 au centre mécanique.
3. Ajuster la vis de réglage d'inclinaison de capteur de sorte que le code d'affichage d'état soit 6, 7 ou 8 sur le moniteur TV.
4. Rechercher le cadre #475.
5. Ajuster VR610 de sorte que l'affichage d'erreur d'inclinaison soit 7.

8. VÉRIFICATION DU CENTRAGE DU MOTEUR À BROCHE

● Objet: Pour vérifier que l'axe du moteur à broche soit au centre de la trajectoire du faisceau laser.

• Instruments de mesure et calibres:	● Oscilloscope ● Résistance (10kΩ×2)
• Point de mesure:	● CN401-9 (TRKG ERR), CN401-1 (TRKG C) et CN401-2 (TRKG A)
• Disque d'essai et mode du lecteur:	● Disque d'essai LD 8 pouces GGV1007...#100 et #23,800 ● Mode de lecture ● Disque d'essai CD (YEDS-7) ● Mode de d'essai (boucle d'asservissement TRKG:ouverte)
• Positions à ajuster:	● L'ensemble chariot doit être en état de lecture avant. ● Vérifier la courbe de Lissajous.

Schéma de connexion



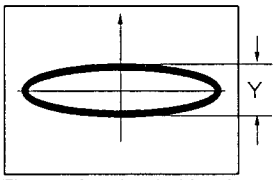


Fig. 1 Courbe de Lissajous de la piste interne du disque (CD)

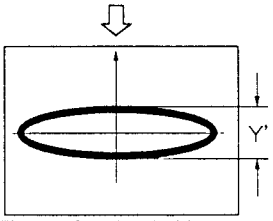


Fig. 2 Courbe de Lissajous de la piste externe du disque (CD)

5. L'axe Y de la courbe de Lissajous doit être identique pour les pistes interne et externe.

Procédure de vérification

1. Reproduire le disque d'essai LD 8 pouces.
2. Amener le capteur sur l'image #23,800 par scanning ou par recherche, puis ouvrir la boucle d'asservissement TRKG.
3. Raccorder l'entrée X (CH-1) de l'oscilloscope à CN401-9 et l'entrée Y (CH-2) à CN401-1 et 2.
   Régler l'oscilloscope en mode X-Y et observer les courbes de Lissajous du signal d'erreur TRKG et le signal TRKG (A+C).
4. Eorire les amplitudes de l'axe Y sur les courbes de Lissajous. (Fig. 1)
5. Fermer la boucle d'asservissement TRKG et rechercher l'image #100, puis ouvrir à nouveau la boucle d'asservissement TRKG pour observer la courbe de Lissajous.
   A ce moment, vérifier que l'amplitude de l'axe Y de la courbe de Lissajous est égale à celle notée à l'étape 4. (Fig. 2)
6. Sortir le disque d'essai LD 8 pouces du lecture, puis charger le disque d'essai CD et répéter la procédure de vérification de 1 à 5.
   Il n'est cependant pas nécessaire de spécifier les positions de piste interne ou externe du disque. Si l'amplitude de l'axe Y de la courbe de Lissajous est différente pour les pistes interne et externe, faire le réglage "9.Réglage de centrage du moteur à broche".

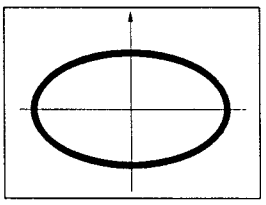


Fig. 3 Courbe de Lissajous lorsque le moteur est mal centré

9. RÉGLAGE DE CENTRAGE DU MOTEUR À BROCHE

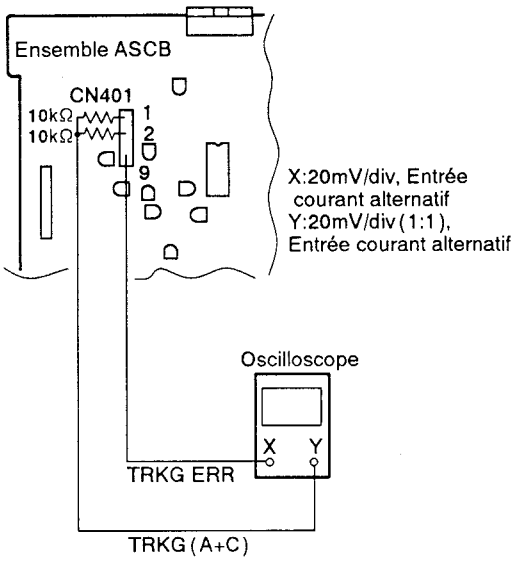
Réglages Mécaniques

● Objet: Régler la position du moteur à broche de manière que l'axe du moteur soit au centre de la trajectoire du faisceau laser.

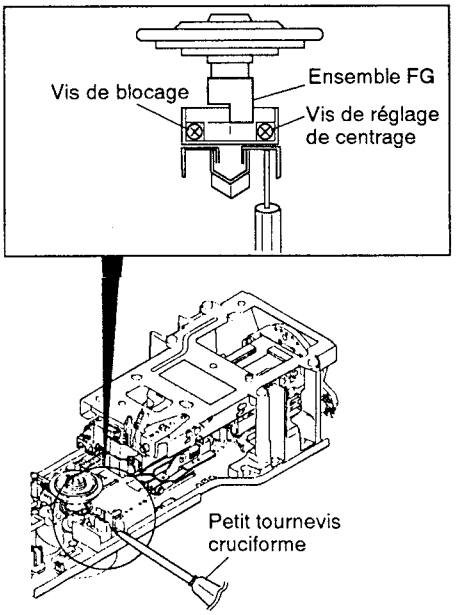
● En cas de mauvais réglage: Sauts de pistes, recherche trop longue.

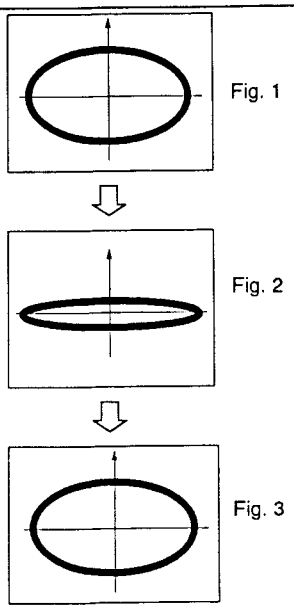
● Instruments de mesure et calibres:	● Petit tournevis cruciforme ● Oscilloscope ● Résistance(10kΩ ×2)
● Point de mesure:	● CN401 - 9(TRKG ERR), CN401 - 1(TRKG C) à CN401 - 2(TRKG A)
● Disque d'essai et mode du lecteur:	● Disque d'essai LD 8 pouces GGV1007...#100 et #23,800 ● Mode de lecture ● Mode de d'essai (boucle d'asservissement TRKG:ouverte/fermée) ● Disque d'essai CD(YEDS - 7)
● Positions à ajuster:	● L'ensemble chariot doit être en état de lecture avant. ● Vis de réglage de centrage du moteur à broche

Schéma de connexion



7. Tourner la vis de réglage de centrage.





7. Courbe de Lissajous

Procédure de réglage

1. Raccorder l'entrée X(CH - 1) de l'oscilloscope à CN401 - 9 et l'entrée Y(CH - 2) à CN401 - 1 et 2.
2. Reproduire le disque d'essai LD 8 pouces et rechercher l'image #23,800.
3. Ouvrir la boucle d'asservissement TRKG et observer les courbes de Lissajous du signal d'erreur TRKG et du signal résultant TRKG.
4. Régler la réfraction avec précision de manière que l'amplitude de l'axe Y de la courbe de Lissajous soit minimisée. (Fig. 2)
5. Fermer la boucle d'asservissement TRKG et rechercher l'image #100.
6. Ouvrir à nouveau la boucle d'asservissement TRKG, observer la courbe de Lissajous et écrire les valeurs. (Fig. 1)
7. Desserrer la vis de blocage et insérer le petit tournevis cruciforme dans l'orifice de réglage. Touner lentement la vis de réglage de centrage de manière que l'amplitude de l'axe Y de la courbe de Lissajous soit réduite. Lorsque l'amplitude de l'axe Y de la courbe de Lissajous est minimisée, touner la vis de réglage un peu plus jusqu'a ce que l'amplitude soit de la même forme que celle observée á l'étape 6. (Fig. 1 - 3)
8. Fermer la boucle d'asservissement TRKG et amener l'ensemble capteur sur la piste externe du disque(#23,800), puis refaire les réglages des étapes 4 à 6.
9. Ouvrir à nouveau la boucle d'asservissement TRKG et observer la courbe de Lissajous pour vérifier que l'amplitude de l'axe Y est au minimum. (Fig. 2)
   Si l'amplitude de l'axe Y de la courbe de Lissajous est supérieure à celle spécifiée, répéter la procédure de réglage de l'étape 5 à l'étape 8.
10. Lorsque le réglage est terminé, faire le réglage de "8. Vérification de centrage du moteur à broche", étape 6.
11. Serrer la vis de blocage.

10. RÉGLAGE FIN DE RÉFRACTION

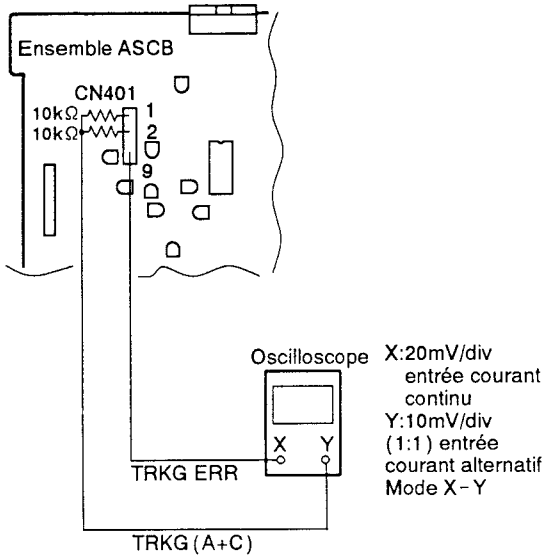
Réglages Mécaniques

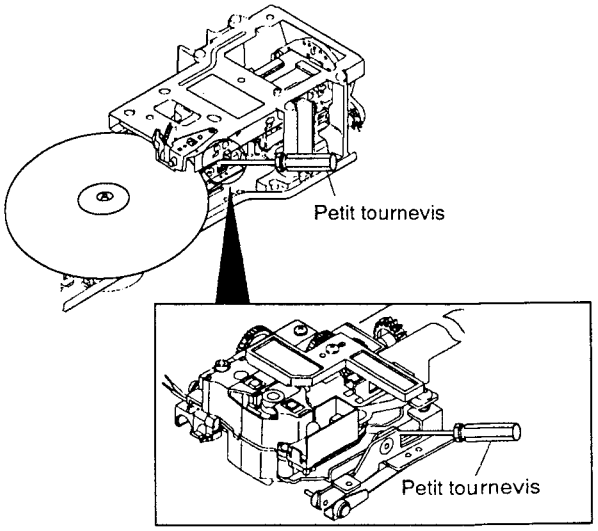
● Objet: Ajuster avec précision la réfraction de manière que les deux faisceaux laser pour la boucle d'asservissement TRKG soient projetés à la position optimale au - dessus des pistes en cours de lecture. Régler la tension offset de la boucle d'asservissement TRKG sur 0V.

● En cas de mauvais réglage: Risque de saut de pistes pendant la lecture.

● Instruments de mesure et calibres:	● Oscilloscope ● Petit tournevis ● Résistance (10kΩ × 2)
● Point de mesure:	● CN401 - 9 (TRKG ERR), CN401 - 1 (TRKG C) et CN401 - 2 (TRKG A)
● Disque d'essai et mode du lecteur:	● Disque d'essai LD 8 pouces GGV1007...#6,500 ● Mode fixe ● Mode d'essai (boucle d'asservissement TRKG:ouverte) ● L'ensemble chariot doit être en état de lecture avant.
● Positions à ajuster:	● Réfraction

Schéma de connexion





3. Insérer le petit tournevis dans l'orifice de réglage de réfraction pour faire le réglage fin.

Procédure de réglage

1. Raccorder l'entrée X (CH - 1) de l'oscilloscope à CN401 - 9 et l'entrée Y (CH - 2) à CN401 - 1 et 2.
2. Reproduire le disque d'essai LD à l'image #6,500, puis ouvrir la boucle d'asservissement TRKG.
   Mettre l'oscilloscope en mode X - Y et observer les courbes de Lissajous du signal d'erreur TRKG et du signal résultant TRKG.
3. Insérer le petit tournevis dans l'orifice de réglage de réfraction et faire le réglage fin de manière que l'amplitude de l'axe Y des courbes de Lissajous soit minimisée. (Fig. 1)
   Si la vis est trop tournée et que la position optimale est impossible à trouver, répéter "2. Réglage approximatif de réfraction".
4. Sélectionner l'entrée X (CH - 1) de l'osciloscope et vérifier que les amplitudes positive et négative du signal d'erreur TRKG sont égales. (Fig. 2)
   Si elles ne sont pas égales, répéter "2. Réglage d'équilibre d'alignement".
5. Fermer la boucle d'asservissement TRKG et vérifier que l'image sur l'écran du téléviseur est normale.

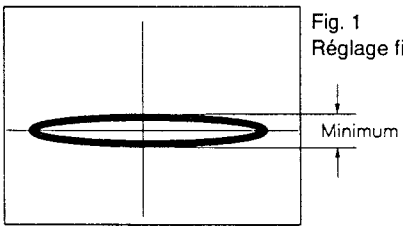


Fig. 1
Réglage fin de réfraction

3. L'amplitude de l'axe Y de la courbe de Lissajous devient minimale

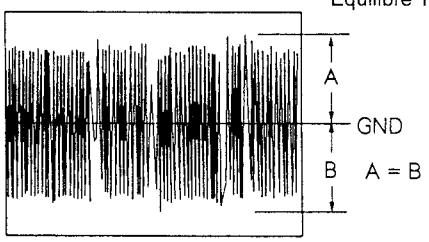


Fig. 2
Equilibre TRKG

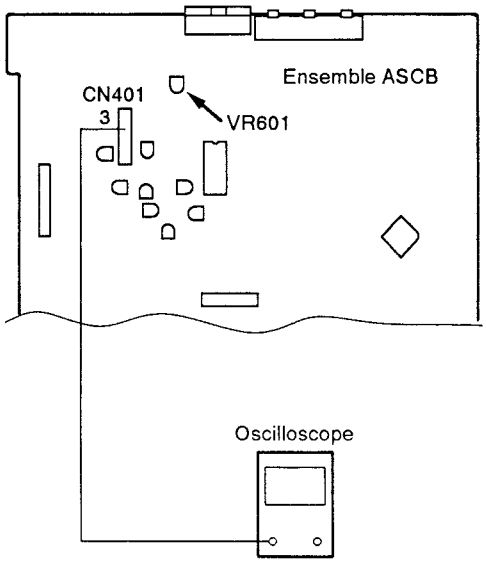
11. RÉGLAGE DE GAIN RF

● Objet: Obtenir la valeur optimale d'amplitude du signal RF.

● En cas de mauvais réglage: Pertes fréquentes de signaux

• Instruments de mesure et calibres:	• Oscilloscope
• Point de mesure:	• CN401 - 3 (signal RF)
• Disque d'essai et mode du lecteur:	• Disque d'essai LD 8 pouces GGV1007...#15,000 • Mode fixe • Mode d'essai (boucle d'asservissement TRKG:fermeé) • Servomoteur d'inclinason:neutre • L'ensemble chariot doit être en état de lecture avant.
• Positions à ajuster:	• VR601 (RF LEVEL)

Schéma de connexion



Procédure de réglage

1. Reproduire le disque d'essai LD et rechercher l'image #15,000.
2. Raccorder un oscilloscope à CN401 - 3 (signal RF) et observer le signal RF.
3. Ajuster VR601 de manière que l'amplitude du signal RF soit 300mV ± 50mV. (Fig. 1)

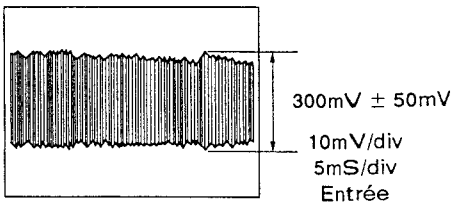


Fig. 1 signal RF

12. RÉGLAGE DE GAIN DE BOUCLE D'ASSERVISSEMENT FOCS

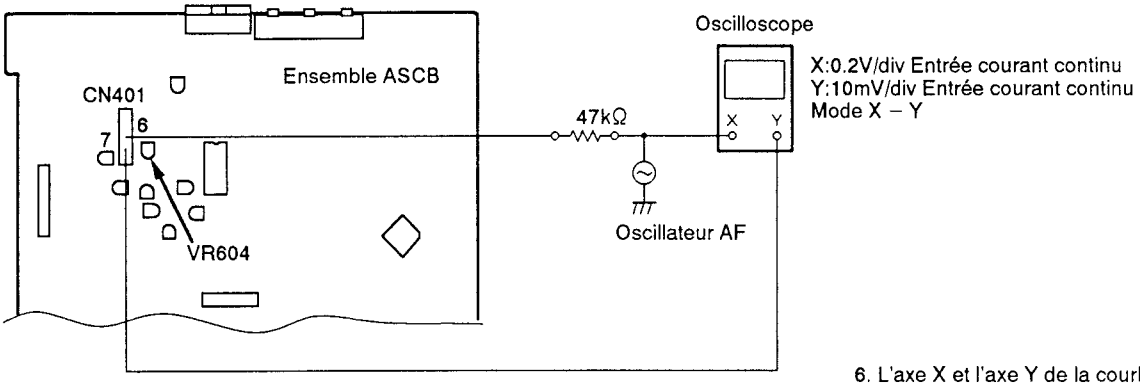
Réglages Mécaniques

● Objet: Régler le gain de la boucle d'asservissement de FOCS sur la valeur optimale.

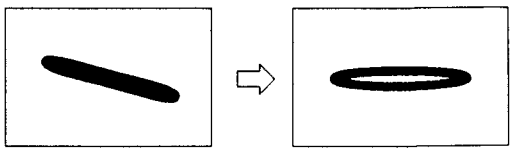
● En cas de mauvais réglage: Les performances diminuent.

● Instruments de mesure et calibres:	● Oscilloscope ● Oscillateur AF ● Résistance(47kΩ)
● Point de mesure:	● CN401-6(FOCS ERR) et CN401-7(FOCS IN)
● Disque d'essai et mode du lecteur:	● Disque d'essai LD 8 pouces GGV1007...#15,000 ● Mode fixe ● Mode d'essai (boucle d'asservissement TRKG:fermée) ● Servomoteur d'inclinason:neutre ● L'ensemble chariot doit être en état de lecture avant.
● Positions à ajuster:	● VR604(FOCS GAIN)

Schéma de connexion



6. L'axe X et l'axe Y de la courbe de Lissajous sont symétriques.



Mauvais réglage Réglage correct

Fig. 1

Procédure de réglage

1. Raccorder l'entrée X(CH-1) de l'oscilloscope via la résistance et l'oscillateur AF à CN401-6, et l'entrée Y(CH-2) à CN401-7, comme indiqué sur le schéma ci-dessus.
2. Régler la sortie de l'oscillateur AF sur 1,7kHz/6Vc-c pour GGV1007, en fonction du disque d'essai utilisé.
3. Reproduire le disque d'essai LD 8 pouces et rechercher l'image #15,000.
4. Régler l'osciloscope en mode X-Y et observer la courbe de Lissajous.
5. Ajuster VR604 de manière que la courbe de Lissajous soit symétrique sur l'axe X et l'axe Y de l'oscilloscope. (Fig. 1)

Remarque : Si la sortie de l'oscillateur AF n'excède pas 6Vc-c, réduire la valeur de la résistance(47kΩ) dans le schéma ci-dessus, pour faciliter l'observation de la courbe de Lissajous. (pas moins de 33kΩ)

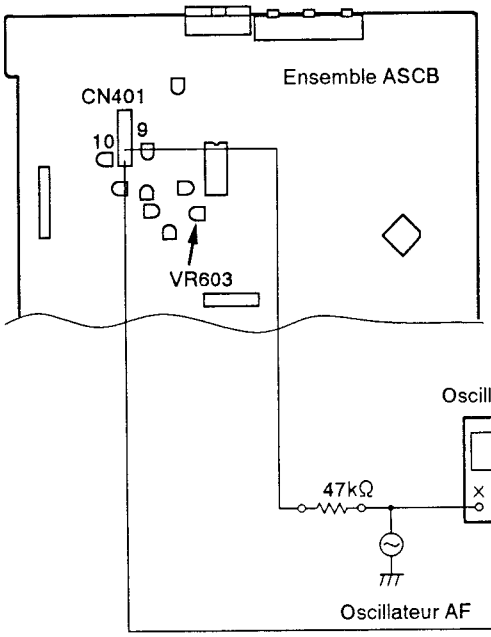
13. RÉGLAGE DE GAIN DE BOUCLE D'ASSERVISSEMENT TRKG

● Objet: Régler le gain de la boucle d'asservissement TRKG sur la valeur optimale.

● En cas de mauvais réglage: Les performance diminuent.

● Instruments de mesure et calibres:	● Oscilloscope ● Résistance(47kΩ) ● Oscillateur AF
● Point de mesure:	● CN401-9(TRKG ERR), CN401-10(TRKG IN)
● Disque d'essai et mode du lecteur:	● Disque d'essai LD 8 pouces GGV1007...#15,000 ● Mode fixe ● Servomoteur d'inclinason:neutre ● Mode d'essai (boucle d'asservissement TRKG:fermée) ● L'ensemble chariot doit être en état de lecture avant.
● Positions à ajuster:	● VR603

Schéma de connexion



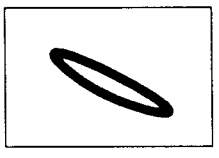
2. Raccorder CN401-9, la résistance, l'oscillateur AF et l'oscilloscope comme illustré.

X:0.2V/div Entrée courant continu
Y:10mV/div Entrée courant continu
Mode X-Y

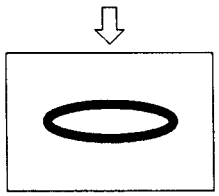
Procédure de réglage

1. Reproduire le disque d'essai LD 8 pouces et rechercher l'image #15,000.
2. Raccorder l'entrée X(CH-1) de l'oscilloscope via la résistance et l'oscillateur AF à CN401-9, et l'entrée Y(CH-2) à CN401-10, comme indiqué sur le schéma ci-dessus.
3. Régler la sortie de l'oscillateur AF sur 3kHz/6Vc-c pour GGV1007, en fonction du disque d'essai utilisé.
4. Régler l'oscilloscope en mode X-Y et observer la courbe de Lissajous.
5. Ajuster VR603 de manière que la courbe de Lissajous soit symétrique sur l'axe X et l'axe Y de l'oscilloscope. (Fig. 1)

Remarque : Si la sortie de l'oscillateur AF n'excède pas 6Vc-c, réduire la valeur de la résistance(47kΩ) dans le schéma ci-dessus, pour faciliter l'observation de la courbe de Lissajous. (pas moins de 33kΩ)



Réglage incorrect



Réglage correct

Fig. 1

5. L'axe X et l'axe Y de la courbe de Lissajous sont symétriques.

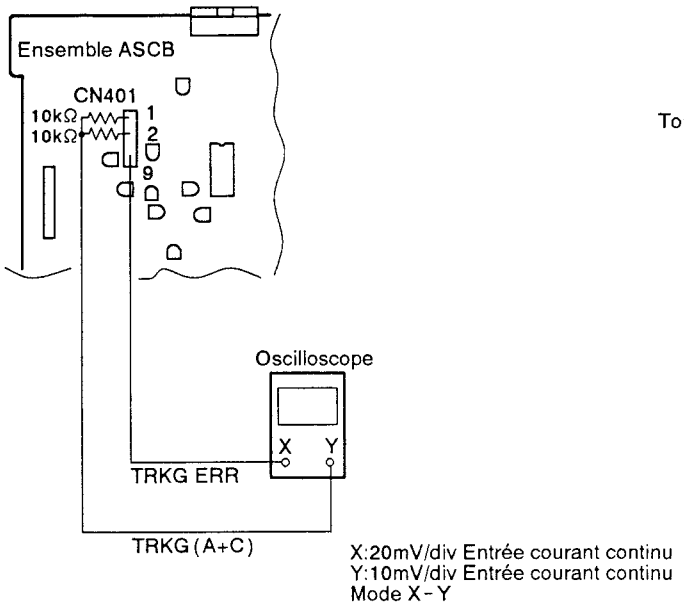
14. RÉGLAGE DE CENTRAGE POUR LA LECTURE DE LA FACE B

Réglages Mécaniques

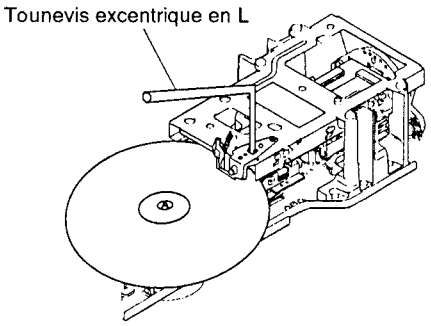
- Objet: Vérifier la position au début de la lecture et régler le moteur à broche au centre de la trajectoire du faisceau laser lors de la lecture de la face B du disque.
- En cas de mauvais réglage: Saut de pistes, temps de recherche plus long ou recherche impossible lors de la lecture de la face B du disque.

• Instruments de mesure et calibres:	• Tournevis excentrique en L(GGV-129) • Oscilloscope • Résistance(10kΩ)
• Point de mesure:	• CN401-9(TRKG ERR), CN401-1(TRKG C) et CN401-2(TRKG A)
• Disque d'essai et mode du lecteur:	• Disque d'essai LD 8 pouces GGV1007...#100 • Mode de lecture • L'ensemble chariot doit être en état de lecture arrière. • Mode d'essai (boucle d'asservissement TRKG:ouverte/fermée)
• Positions à ajuster:	• Orifice de réglage de centrage pour la face B

Schéma de connexion



4. Réglage de centrage pour la lecture de la face B.



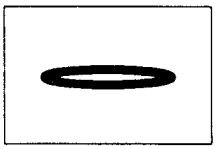


Fig. 1

4. Réglage correct(X:maximum).

Procédure de réglage

1. Retourner le disque d'essai LD(remplacer la face A par la face.B). La position de début de lecture de la face A à B doit être aux alentours de l'image #3,500.
2. Mettre l'oscilloscope en mode X-Y, et raccorder l'entrée X (CH-1) de l'oscilloscope à CN401-9(TRKG ERR) et l'entrée Y(CH-2) à CN401-1 et 2(TRKG A+C).
3. Reproduire le disque d'essai LD et rechercher l'image #100, puis ouvrir la boucle d'asservissement TRKG.

Remarque: Si l'axe est trop excentré sur la face B du disque, puisque la recherche est impossible sur la face B, ouvrir la boucle d'asservissement TRKG lorsque l'ensemble chariot se déplace vers la position de lecture de la face B et recherche l'image #100.

4. Tout en observant la courbe de Lissajous sur l'oscilloscope, insérer le tournevis excentrique dans l'orifice de réglage de centrage pour la face B et le tourner de maniète que l'amplitude de l'axe X de la courbe de Lissajous soit minimisé (position "sur piste"). Tourner ensuite le tournevis excentrique un peu plus dans le sens horaire jusqu'à ce que l'amplitude de l'axe X sur la courbe de Lissajous soit au maximum. (Fig. 1)

Remarque: Si "4. Réglage de l'inclinason du capteur" est réalisé pendant que le capteur est en état avant, effectuer "15.Réglage de l'angle de direction tangentielle du capteur pour la lecture de la face B" et "16. Réglage fin de centrage pour la lecture de la face B".

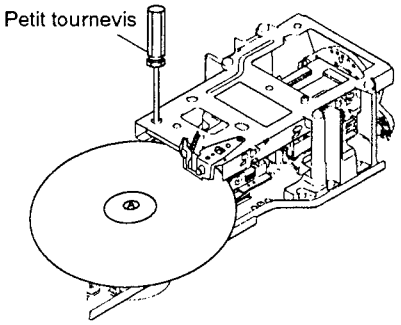
15. RÉGLAGE DE L'ANGLE DE DIRECTION TANGENTIELLE DU CAPTEUR POUR LA LECTURE DE LA FACE B

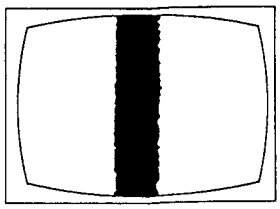
Réglages Mécaniques

- Objet: Régler la diaphonie au minimum dans l'angle de direction tangentielle de l'ensemble capteur lors de la lecture de la face B du disque.
- En cas de mauvais réglage: La diaphonie est importante.

• Instruments de mesure et calibres:	• Moniteur TV • Petit tournevis cruciforme
• Point de mesure:	• Ecran de contrôle
• Disque d'essai et mode du lecteur:	• Disque d'essai LD 8 pouces GGV1007...#475 • Mode fixe • L'ensemble chariot doit être en état de lecture arrière.
• Positions à ajuster:	• Vis de réglage de l'angle de direction tangentielle du capteur

Schéma de connexion





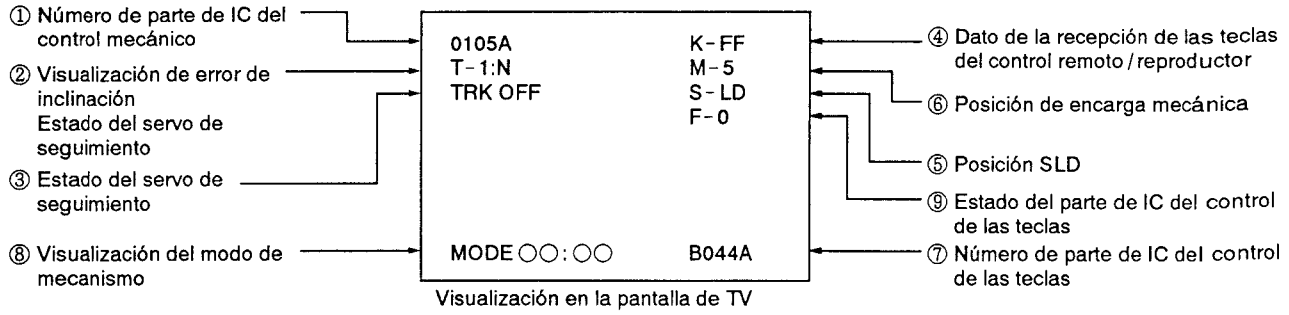
2. Diaphonie minimale

Procédure de réglage

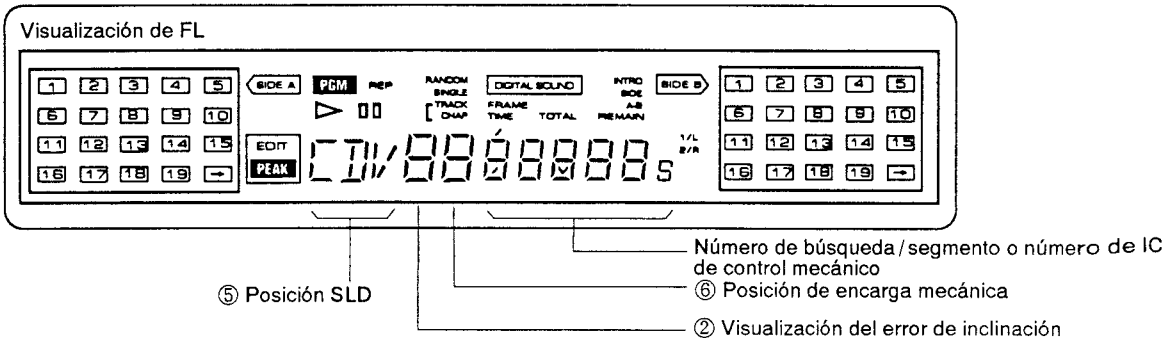
1. Reproduire le disque d'essai LD et rechercher l'image #475.
2. Vérifier si de la diaphonie apparaît sur l'écran du moniteur TV et tourner la vis de réglage de l'angle de direction tangentielle du capteur de manière à minimiser la diaphonie.
3. Lorsque les étapes 1 et 2 sont terminées, effectuer à nouveau "14. Réglage de centrage pour la lecture de la face b".

Remarque: Si l'angle de direction tangentielle du capteur pour la lecture de la face B est modifié par ce réglage, le centre du disque pour la face B peut être légèrement décalé. Pour remédier à cela, refaire le réglage de centrage.

7.3.5 VISUALIZACIÓNES EN LA PANTALLA DE TV Y DE LED EN EL MODO DE PRUEBA



Visualización en la pantalla de TV



① Se mostrará el número de parte de IC (conjunto de tabla ASCB) del control mecánico.

PD0105A1 → 0105A

② Estado del servo de inclinación / Visualización del error de inclinación

T-○:○○

- Estado de servo de inclinación:
  - N...Inclinación neutral
  - ON...ON del servo de inclinación
  - OFF...OFF del servo de inclinación
- Visualización del error de inclinación
  - 0 Inclinación −
  - ↕ Inclinación neutral
  - F Inclinación +

③ Estado del servo de seguimiento

Visualización en la pantalla de TV

TRK-○○○

└— ON...Cerrado del servo de seguimiento

OFF...Abierto del servo de seguimiento

④ Dato de la recepción de las teclas del control remoto / reproductor

Visualización en la pantalla de TV

K-○○

└— Vea la tabla abajo.

Código	Función	Código	Función	Código	Función	Código	Función
00	0	20	F JOG0	40	(CHAP / TRK)	60	
01	1	21	F JOG1	41	(FRAM / TIM)	61	
02	2	22	F JOG2	42	(SEARCH)	62	
03	3	23	F JOG3	43	DISPLAY	63	
04	4	24	R JOG0	44	REPEAT B	64	
05	5	25	R JOG1	45	CLEAR	65	
06	6	26	R JOG2	46	SPEED –	66	
07	7	27	R JOG3	47	SPEED +	67	
08	8	28		48	REPEAT A	68	
09	9	29		49	(2 / R)	69	
0A	VOLUME +	2A		4A	(STEREO)	6A	
0B	VOLUME –	2B		4B	(1 / L)	6B	
0C	DGT / ANL	2C		4C	PROGRAM	6C	
0D		2D		4D		6D	PLAY /PAUSE
0E	CX ON/OFF	2E		4E		6E	STOP
0F	(TV / LDP)	2F		4F		6F	OPEN / CLOSE
10	(F-SCAN)	30		50	F-STEP	70	
11	(R-SCAN)	31		51		71	DIRECT CD
12		32		52	F-SKIP	72	PEAK
13	CHAP / FRME	33		53	R-SKIP	73	SINGLE
14		34		54	R-STEP	74	
15		35		55	R-MULT	75	
16	STOP / OPEN	36		56		76	
17	PLAY/SERCH	37	DGT LEVEL	57		77	
18	PAUSE	38		58	F-MULT	78	
19		39		59		79	
1A	(POW ON)	3A		5A	HILIT / INTR	7A	
1B	(POW OFF)	3B		5B		7B	
1C	POW ON/OFF	3C		5C		7C	
1D	EDIT	3D		5D		7D	
1E	AUDIO	3E		5E	RNDM (TEST)	7E	
1F	+10	3F		5F	(ESC)	7F	

⑤ Posición de SLD

Visualización en la pantalla de TV

S-○○○

└— IN ... ON del interruptor interior del CD

CD ... Área activo del CD

CDV ... Área activo del CDV

LD ... Área activo del LD

⑥ Posición de encarga mecánica

Visualización en la pantalla de TV

M-○

└— 0 ... Abierto de la bandeja

1 ... Encarga

2 ... Preparado

3 ... Sujetado

5 ... Menos de inclinación

6 ... Inclinación neutral (un lado)

7 ... Más de inclinación

8 ... Limite de inclinación

9 ... El lado B sujetado (dos lados)

⑦ Estado compensador de VR de foco

Visualización en la pantalla de TV

F-○

└ 0 ... Modo normal

•Cuando cierre el servo de seguimiento, VR606 (CT BEST) es efectivo.

•Cuando abre el servo de seguimiento, VR605 (TE BEST) es efectivo.

1 ... Cuando abre el servo de seguimiento, VR606 (CT BEST) es también efectivo.

7.4 AJUSTES

7.4.1 INSTRUMENTOS REQUERIDOS

- Destornillador pequeño (con un mango de aprox. 10cm)
- Destornillador pequeño de Phillips
- Llaves inglesas hexagonales (2,0mm y 2,5mm)
- Osciloscopio de doble traza (con retardo)
- Oscilador de AF
- Frecuencímetro
- Disco de prueba LD (GGV1007)
- Disco LDD (se vende en el mercado)
- Disco de prueba CD (YEDS-7)
- Presilla cortocircuitadora
- Destornillador excéntrico con la forma L (GGV-129)
- Destornillador de cabeza Phillips
- Resistor (47kΩ , 10kΩ × 2)
- Filtro de paso bajo (47kΩ +1 μF)
- Voltímetro digital

7.4.2 PREPARATIVOS Y PRECAUCIÓNES PARA LOS AJUSTES

1) Ajuste la altura del reproductor cuando se reemplaza el motor de eje.

2) Reproduccíon del lado B

Es posible reproducir directamente el lado B por presionando la tecla SIDE B en el panel frontal.

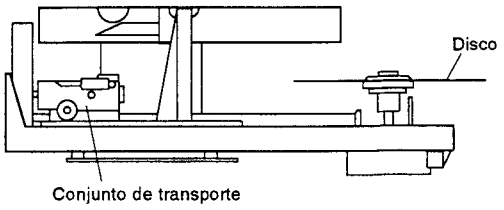
3)Disco de prueba

GGV1007 puede ser usado como un disco de prueba LD para el ajuste mecánico y para el ajuste del conjunto de la tabla ASCB

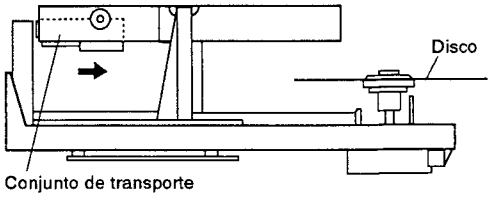
4) Los números en el diagrama de conexiones corresponden a los múmeros en el texto que explica el procedimiento de ajuste.

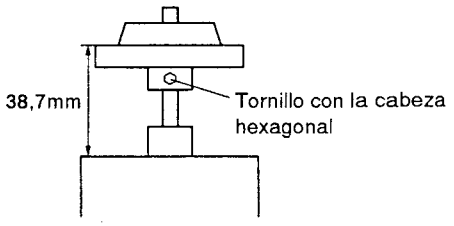
5) Los números de fotograma no se muestran en el monitor de TV, lee por favor la visualización de FL.

Conjunto de transporte en el estado de avance



Conjunto de transporte en el estado de avance contrario





Suelte el tornillo con la cabeza hexagonal y mida la altura con el calibrador. Desqués, fijo el tornillo otra vez.

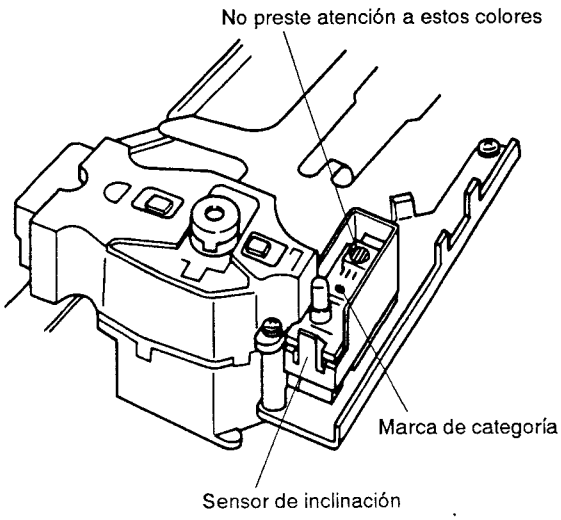
Ajuste de la altura del reproductor

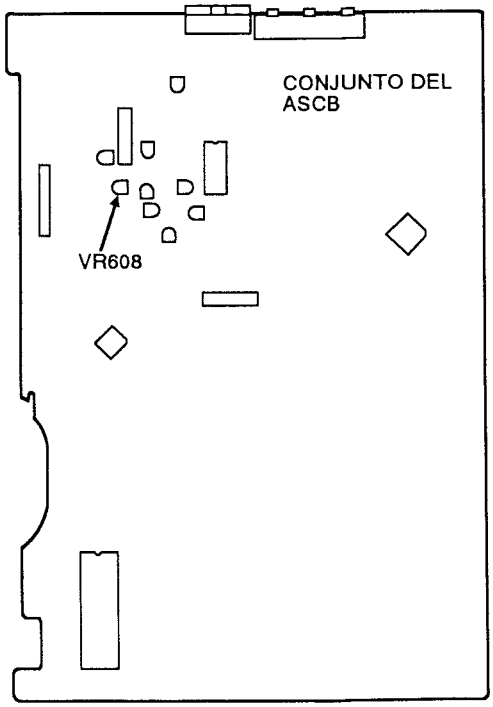
7.4.3 AJUSTES MECANICOS
1.AJUSTE DE LA GANANCIA DE SERVOS DE INCLINACIÓN

- Propósito: Para ajustar la ganancia de servos de inclinación de acuerdo con la categoría de sensibilidad(nivel) del sensor de inclinación.
- Cuando no se ajuata correctamente: Oscilación aumentada del servo de inclinación o diafonía.

• Instrumentos y dispositivos de medida: • Punto de medita: • Disco de prueba y el modo de reproductor:	• Destornillador pequeño
• Posiciones para	• VR608(TILT GAIN)

Diagrama de conexiones





Procedimiento de ajuste

1. Use un destornillador para ajustar el ángulo de VR608 sobre el conjunto del ASCB de acuerdo con el color de la indicación de categoría.

Categoría	Color	Angule de VR
A	Rojo	Hacia la derecha
B	Nada	Centro mecánico
C	Azul	Hacia la izquierda

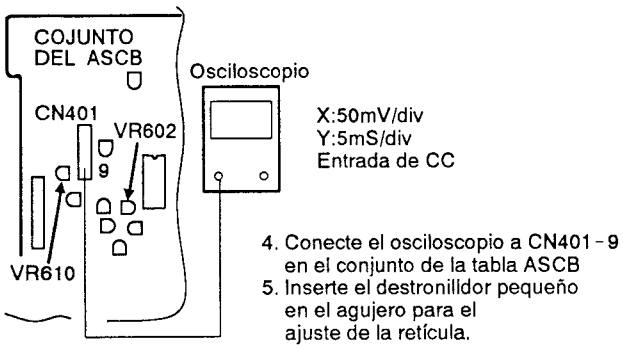
2. AJUSTE APROXIMADO DE LA RETÍCULA Y AJUSTE DEL EQUILIBRIO DE SEGUIMIENTO

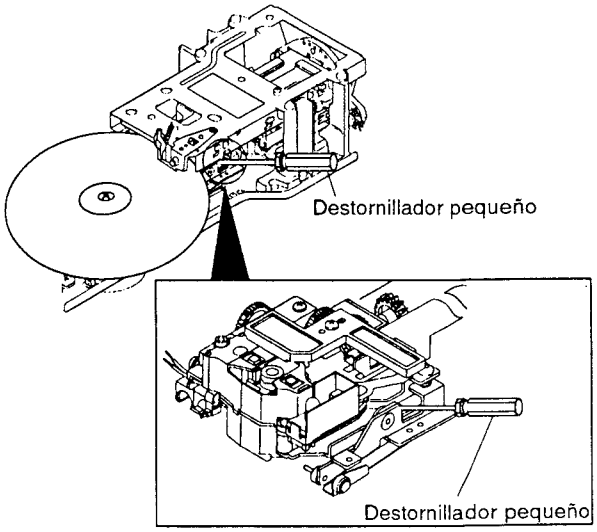
Ajustes Mecánicos

- Propósito: Para ajustar el rayo lasérico que se divide en tres por la retícula, se emita en la posición óptima de la pista. Ajuste la tension de servo de seguimiento en OV.
- Cuando no se ajusta correctamente: La reproducción de los discos será imposible. Durante la reproducción las pistas se saltan.

• Instrumentos y dispositivos de medida:	● Destornillador pequeño ● Osciloscopio
• Punto de medita:	● CN401 - 9 (TRKG ERR)
• Disco de prueba y el modo de reproductor:	● Disco de prueba de 8 pulgadas (GGV1007)...n.°6,500 ● Modo de prueba (servo de seguimiento:Abierto) ● El conjunto de transporte debe ser en el estado de avance.
• Posiciones para ajustarse:	● Retícula ● VR602 (TRKG BAL).

Diagrama de conexiones





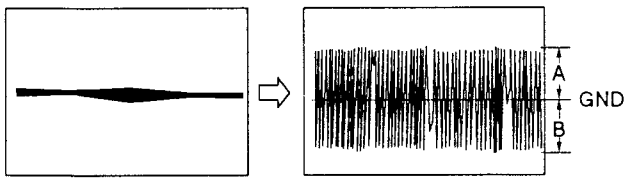


Fig. 1 Posición punto nulo

Fig. 2 Amplitud máxima A=B

Procedimiento de ajuste

<Ajuste aproximado de la retícula>

1. Reproduzca el disco de prueba LD.
2. Busque el fotograma n. ° 6,500.
3. Abra el servo de seguimiento. (Véase la sección 7.3)
4. Conecte el osciloscopio a CN401 - 9 y observe la forma de onda.
5. Inserte el destornillador en el agujero para el ajuste de la retícula. A medita que gira la retícura, la amplitud de la forma de onda del error de seguimiento se cambia.
   Busque la posición en la que la amplitud de la forma de onda sea minima con la línea plana. (Fig. 1)
   (Esto indica que 3 modos del rayo lasérico se emiten hacia la pista. Esto se disco como la posición "punto unlo".)
6. Lentamente haga girar la retícula a la izquierda desde la posición de pista hasta que la amplitud de la forma de onda sea máxima. (Fig. 2)
7. Cierre el servo de seguimiento y compruebe que se muestra la visualización normal en la pantalla de TV.

<Ajuste del equilibrio de seguimiento>

1. Alinee GND del osciloscopio hasta que se ponga en el centro de la pantalla del osciloscopio.
2. Ajuste VR602 hasta que las amplitudes positiva y negativa de la forma de onda del error de seguimiento sean iguales. (Fig. 2)

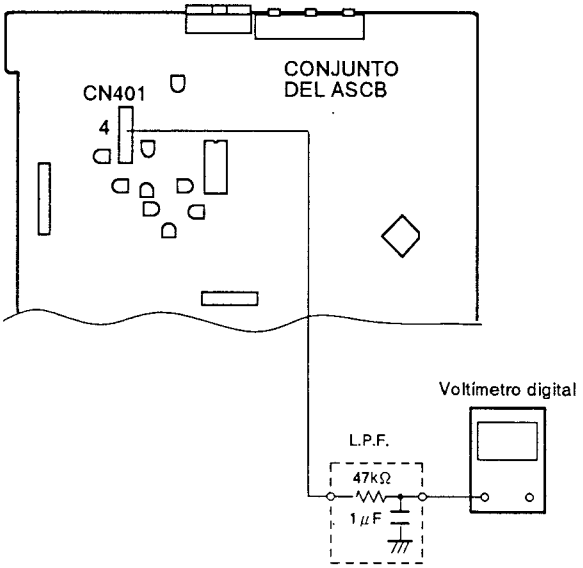
Nota:Si el ajuste de VR602 desarregla la retícura, realice el ajuste después de colocar VR610 en el centro mecánico.

3. AJUSTE HORIZONTAL DEL EJE DE CORREDERA

- Propósito: Para ajustar el eje de corredera de manera que el captor pueda mover horizontalmente sobre el disco.
- Cuando no se ajusta correctamente: Con el disco deformado, el servo de foco no funciona en el interior o exterior del disco.

• Instrumentos y dispositivos de medida:	• Voltímetro digital • Filtro de paso bajo (47k Ω + 1 μF)
• Punto de medita:	• CN401 - 4 (FCS RTN) y GND
• Disco de prueba y el modo de reproductor:	• Disco de prueba de 8 pulgadas (GGV1007) • Modo de prueba (n.°9,800/n.°23,800 Abierto del servo de seguimiento, OFF del servo de inclinación)
• Posiciones para ajustarse:	• Tecla SKIP del reproductor(en el modo de prueba)

Diagrama de conexiones



Procedimiento de ajuste

1. Conecte el voltímetro digital a CN401 - 4 por L.P.F.
2. Abra el servo de seguimiento, y busque el fotograma n.°9,800.
3. Compruebe le tensión.
4. Busque el fotograma n.°23,800 y compruebe que la tensión está igual con la tensión del fotograma n.°9,800.

4. AJUSTE DE LA INCLINACIÓN DEL CAPTOR

- Propósito: Para ajustar la inclinación del captor hasta que el rayo lasérico golpee el disco verticalmente.
- Cuando no se ajusta correctamente: Se ocurre la diafonía.

• Instrumentos y dispositivos de medida:	• Monitor de TV • Destornillador pequeño Phillips • Osciloscopio
• Punto de medita:	• CN401 - 3 (RF)
• Disco de prueba y el modo de reproductor:	• Disco de prueba LD de 8 pulgadas (GGV1007) • Modo fijo • Modo de prueba (n. °2,251, fijo (Pantalla negra))
• Posiciones para ajustarse:	• Conjunto de captor TRK/Tornillos para el ajuste de la inclinación en sentido tangencial

Diagrama de conexiones

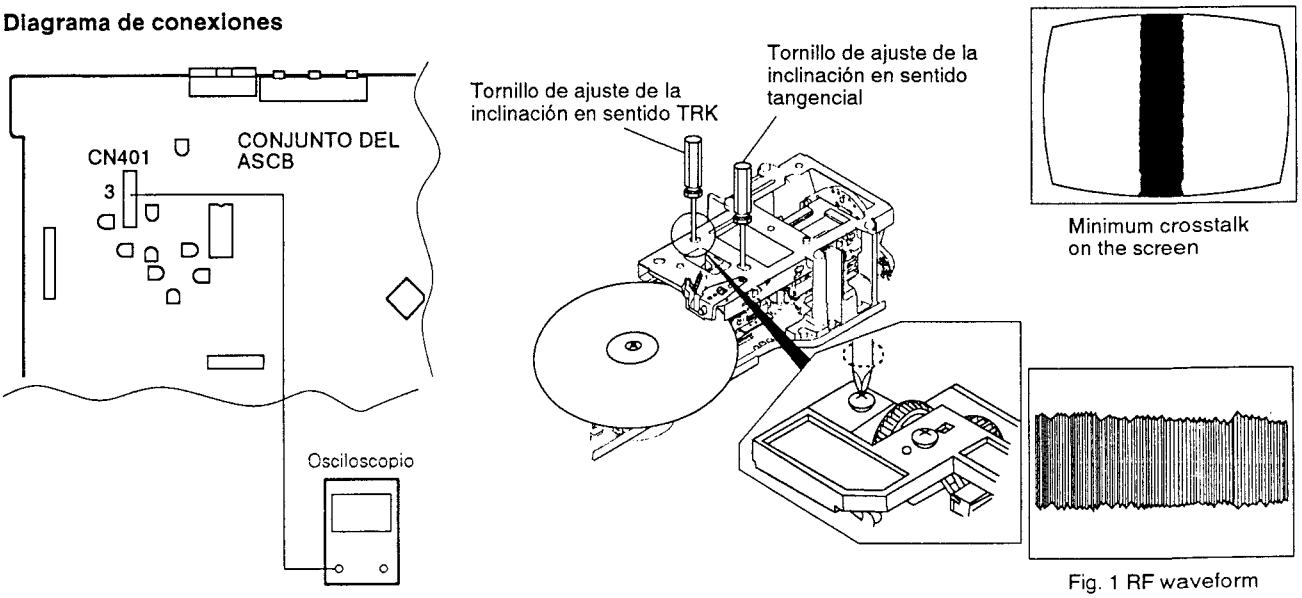


Fig. 1 RF waveform

Procedimiento de ajuste

1. Conecte el osciloscopio a CN401 - 3.
2. Busque el fotograma n. ° 2,251 para observar la forma de onda.
3. Ajuste el tornillo de ajuste de la inclinación en sentido TRK y el tornillo de ajuste de la inclinación en sentido tangencial hasta que la amplitud de la forma de onda sea máxima.
4. Observe la pantalla de TV y asegúrese de no hay diafonía.

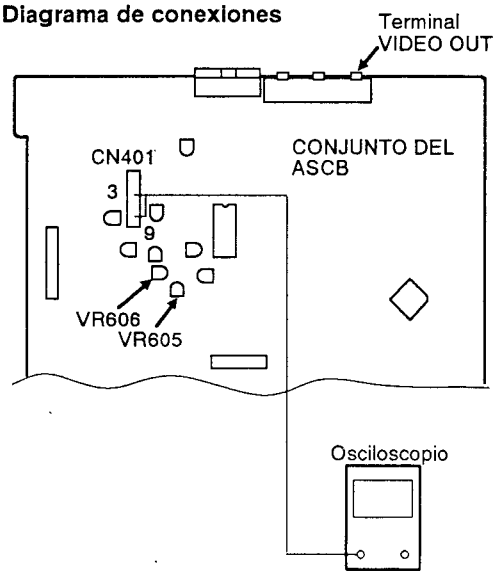
Nota: Si se ocurre todavía la diafonía, realice los procedimientos siguientes.

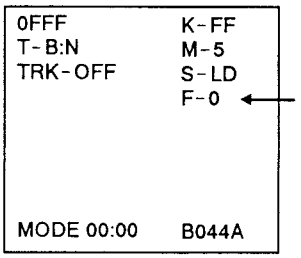
5. AJUSTE DEL ERROR DE SEGUIMIENTO/AJUSTE DE LA DIAFONÍA

- Próposito: Para ajustar el servo de foco en el estado óptimo cuando se hace la reproducción normal o se salta la pista(búsqueda).
- Cuando no se ajusta correctamete: Se ocurre la diafonía.

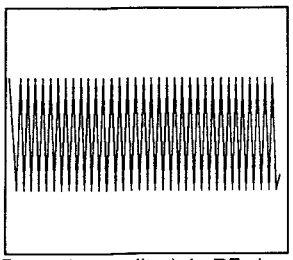
• Instrumentos y dispositivos de medida:	● Monitor de TV ● Osciloscopio
• Punto de medita:	● CN401-3 (RF) ● CN401-9 (TRKG ERR) ● Terminal VIDEO OUT del reproductor
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD 8 pulgadas (GGV1007) ● Modo de prueba (Cerrado/abierto del servo TRK, OFF del servo de inclinación)
• Posiciones para ajustarse:	● VR605 (TE BEST) ● VR606 (CT BEST)

Diagrama de conexiones

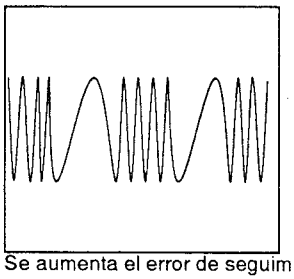




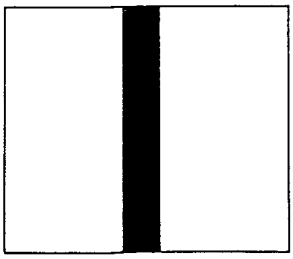
Visualización en la pantalla de modo de prueba



Ponga la amplitud de RF al máximo en el fotograma n.°2,251



Se aumenta el error de seguimiento



Se reduce la diafonía de n.°475 al mímino.

Procedimiento de ajuste

Nota: Realice este ajuste cuando todavía se ocurre la diafonía perceptible en la visualización en la pantalla como se escribe en la sección"4. Ajuste de la inclinación del captor"

1. Conecte el osciloscopio CN401-9.
2. Abre el servo TRK.
3. Compruebe que la visualización en la pantalla de modo de prueba está F-0.
   Si no, ponga la tecla MULTI-SPEED REV del control remoto en F-0.
4. Ajuste VR605 hasta que la amplitud de la forma de onda del error TRKG sea máxima.
5. Cierre el servo TRKG.
6. Conecte el osciloscopio a CN401-3.
7. Presione la tecla MULTI-SPEED FWD del control remoto hasta que se muestre "F-1" en la pantalla de TV
8. Busque el fotograma n. °2,251 y ajuste VR606 hasta que la amplitud de la forma de onda RF sea máxima.
9. Compruebe que la diafonía en la pantalla de TV está mínima en el fotograma n.°475.

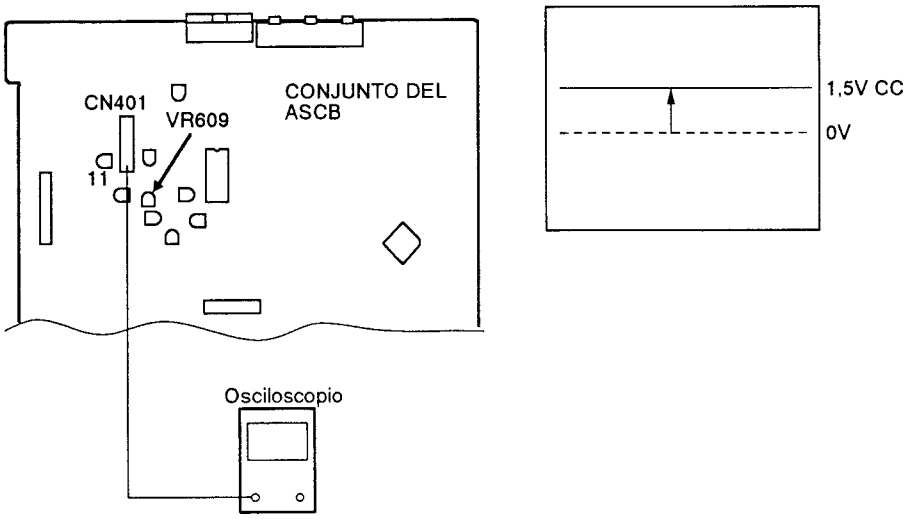
Nota: Después del ajuste, asegúrese de hacer el "Ajuste del nivel de la suma del foco" en la sección 6.

6. AJUSTE DEL NIVEL DE LA SUMA DEL FOCO

- Propósito: Para ajustar el nivel de suma (FCS A+C) de B1 – B4 al valor óptimo para activar el servo FOCS.
- Cuando no se ajusta correctamente: Peproducción empeorada.

• Instrumentos y dispositivos de medida:	● Monitor de TV ● Osciloscopio
• Punto de medita:	● CN401 - 11 (FCS SUM)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas (GGV1007)...n.°15,000 ● Modo fijo ● Modo de prueba(servo de seguimiento:Cerrad) ● Servo de indinación:Neutral
• Posiciones para ajustarse:	● VR609 (FCS SUM)

Diagrama de conexiones



Procedimiento de ajuste

Nota:Realice este ajuste después de la sección "5. Ajuste del error de seguimiento/ajuste de la diafonía"

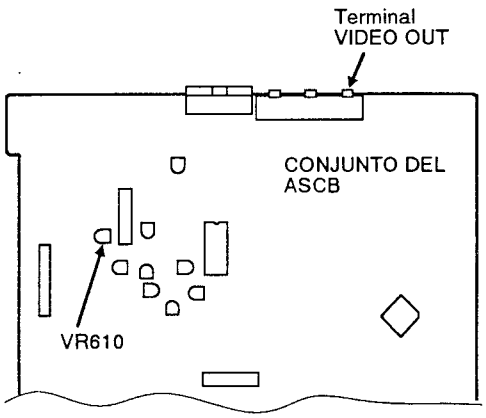
1. Conecte el osciloscopio a CN401 - 11.
2. Ajuste VR609 hasta que la tensión sea 1,5V CC.

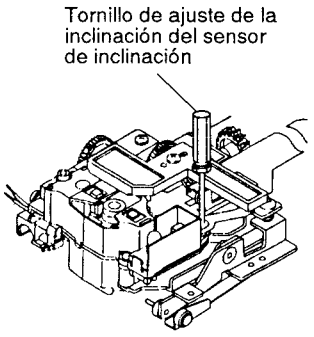
7. AJUSTE DEL SENSOR DE INCLINACIÓN/AJUSTE DEL EQUILIBLIO DE LA INCLINACIÓN

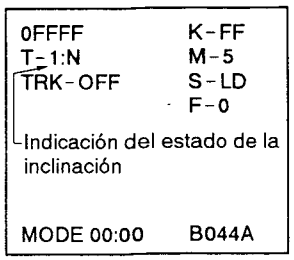
- Propósito: Para justar el LED del sensor de inclinación verticalmente al disco. También, para compensar la diferencia de sensibilidad entre dos sensores.
- Cuando no se ajusta correctamente: Se ocurre la diafonía.

• Instrumentos y dispositivos de medida:	• Monitor de TV • Destornillador pequeño de Phillips
• Punto de medita:	• Terminal VIDEO OUT del reproductor
• Disco de prueba y el modo de reproductor:	• Disco de prueba LD de 8 pulgadas (GGV1007) • Modo de prueba (n.°16,200/n.°475 fijo, Cerrado del servo TRK, OFF del servo de la inclinación)
• Posiciones para ajustarse:	• Tornillo de ajuste de la inclinación del servo de inclibación • VR610 (TILT BAL).

Diagram de conexiones







Visualización en la pantalla de TV

Nota: Esta visualización indica la localización del error de la inclinación. Otras visualizaciónes se difieren poco del estado actual.

Procedimiento de ajuste

1. Busque el fotograma n.°16,200 en el disco de prueba.
2. Ponga VR610 en el centro mecánico.
3. Ajuste el tornillo de ajuste de la inclinación del sensor de inclinación hasta que el código de la visualización sea 6,7 ó 8 en el monitor de TV.
4. Busque el fotograma n.°475.
5. Ajuste VR610 hasta que la visualización del error de la inclinación sea 7.

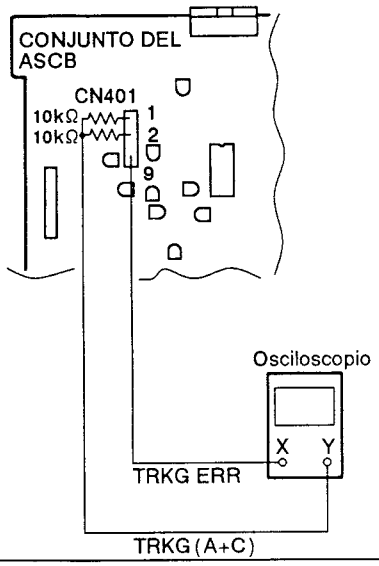
8. COMPROBACIÓN DEL CENTRADO DEL MOTOR DE EJE

Ajustes Mecánicos

● Próposito: Para comprobar que el centro del motor de eje quedo en la órbita del rayo lasérico.

• Instrumentos y dispositivos de medida:	● Osciloscopio ● Resistor(10kΩ ×2)
• Punto de medita:	● CN401-9(TRKG ERR), CN401-1(TRKG C) y CN401-2(TRKG A)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°100 y n.°23,800 ● Modo de reproducción ● Disco de prueba CD(YEDS-7) ● Modo de prueba(servo de TRKG:Abierto) ● El conjunto de tranporte debe ser en el estado de avance
• Posiciones para ajustarse:	● Compruebe la figura de Lissajous.

Diagrama de conexiones



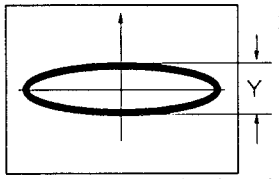


Fig. 1 Figura de Lissajous de la pista interior del disco(CD)

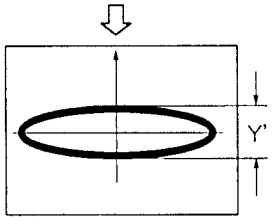


Fig. 2 Figura de Lissajous de la pista interior del disco(CD)

5. El eje Y de la figura de Lissajous debe ser mismo en ambas pistas interior y exterior.

Procedimiento de ajuste

1. Reproduzca el disco de prueba LD de 8 pulgadas.
2. Mueva el captor al fotograma n.°23,800 por examinando o buscando, y abra el servo de seguimiento.
3. Conecte la entrada-X(CH-1) del osciloscopio a CN401-9 y conecte la entrada-Y(CH-2) a CN401-1 y 2.
   Ajuste el osciloscopio en el modo de X-Y y observe las figuras de Lissajous de la señal de error de seguimiento y la señal de seguimiento(A+C).
4. Escriba las amplitudes de las figras de Lissajous.(Fig. 1)
5. Cierre el servo de seguimmiento y busque el fotograma n.°100, y abra el servo de seguimiento otra vez para observar la figura de Lissajous.
   En este momento, compruebe que la amplitud del eje-Y de la figura de Lissajous es misma que la amplitud excrita en la etapa 4.(Fig. 2)
6. Remueva el disco de prueba LD de 8 pulgadas desde el reproductor, coloque el disco de prueba CD y repita las etapas 1 a 5. Sin embargo, no es necesario especificar las posiciones de la pista interior o exterior. Si la amplitud del eje-Y de la figura de Lissajous está diferente entre las pistas interior o exterior, realice los procedimientos en la sección "9. Ajuste del centrado del motor de eje".

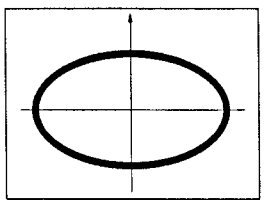


Fig. 3 Figura de Lissajous cuando no se ajusta correctamente.

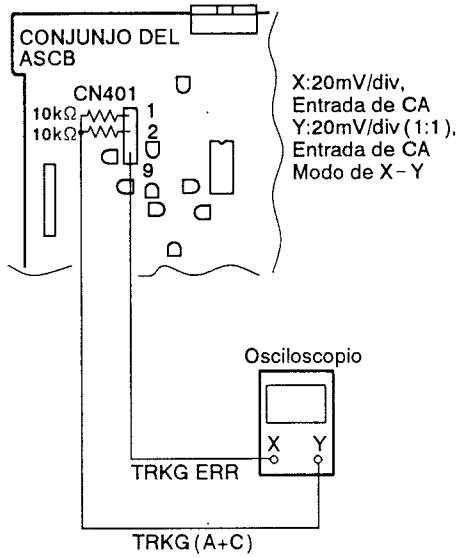
9. AJUSTE DEL CENTRADO DEL MOTOR DE EJE

● Propósito: Para ajustar para que el centro del motor de eje se quede en la órbita del rayo lasérico.

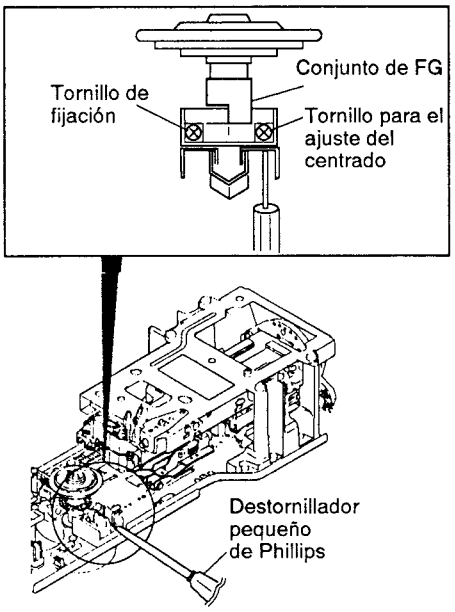
● Cuando no se ajusta correctamente: Se salta la pista y se trada más tiempo en buscar.

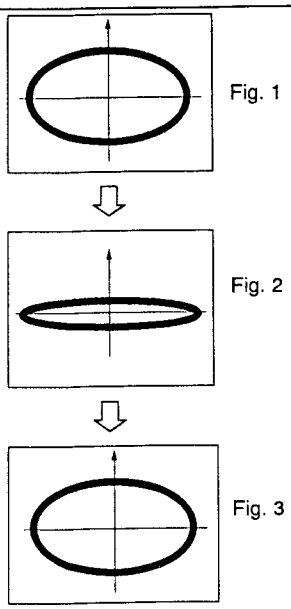
• Instrumentos y dispositivos de medida:	● Destornillador pequeño de Phillips ● Osciloscopio ● Resistor(10kΩ×2)
• Punto de medita:	● CN401-9(TRKG ERR), CN401-1(TRKG C) y CN401-2(TRKG A)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 GGV1007...n.°100 y n.°23,800 ● Modo de reproducción ● Modo de prueba (servo de seguimiento:Abierto/Cerrado) ● Disco de prueba CD(YEDS-7)
• Posiciones para ajustarse:	● El conjunto de transporte debe ser en el modo de avance. ● Vis de réglage de centrage du moteur à broche

Diagrama de conexiones



7. Ajuste el tornillo para el ajuste del centrado.





7. Figura deLissajous

Procedimiento de ajuste

1. Conecte la entrada-X(CH-1) del osciloscopio a CN CN401-9 y conecte la entrada-Y(CH-2) a CN401-1 y 2.
2. Reroduzca el disco del prueba LD de 8 pulgadas y busque el fotograma n.° 23,800.
3. Abra el servo de seguimiento y observe las figuras de Lissajous de la señal de error de seguimiento y la señal del sumo de seguimiento.
4. Ajuste exacxtamente la retícula hasta que la amplitud del eje-Y de la figura de Lissajous se disminuya.(Fig. 2)
5. Cierre el servo de seguimiento y busque el fotograma n.° 100.
6. Abra el servo de seguimiento otra vez, obserce la figura de Lissajous y escriba los valores.(Fig. 1)
7. Suelte un tornillo de fijación y inserte el destornillador pequeño con la cebaza Phillips a través del agujero para el ajuste, y haga girar lentamente el tornillo para el ajuste del centrado hasta que la amplitud del eje-Y de la figuras de Lissajous se reduzca. Después de que la amplitud del eje — Y de la figura de Lissajous se disminuya, haga girar el tornillo má hasta que la amplitud se aparezca en la misma forma que en la etapa 6. (Fig. 1-3)
8. Cierre el servo de seguimiento, mueva el conjunto de captor a la pista exterior del disco(n.° 23,800) y realice los ajustes en las etapas 4 a 6 otra vez.
9. Abra de nuevo el servo de seguimiento y observe la figura de Lissajous para comprobar que la amplitud del eje-Y es mínima.(Fig. 2)
   Si la amplitud del eje-Y de la figura de Lissajous está más larga que se especifica, repita las etapas 5 a 8.
10. Después del ajuste, realice la las etapa 6 en la sección "8. Comprobación del centrado del motor de eje".
11. Apriete el tornillo de fijación.

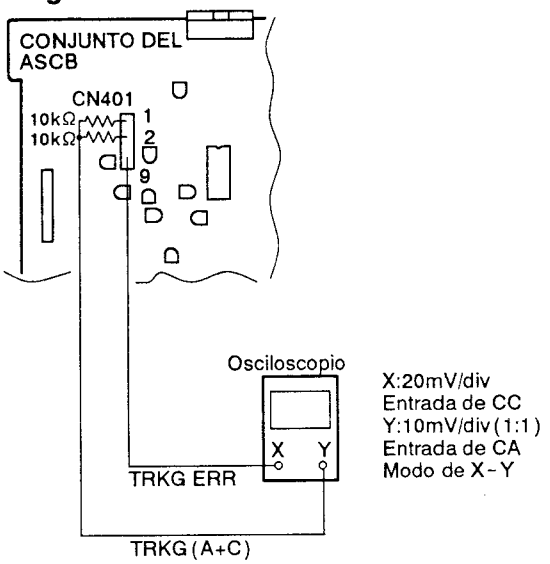
10. AJUSTE FINO DE LA RETíCULA

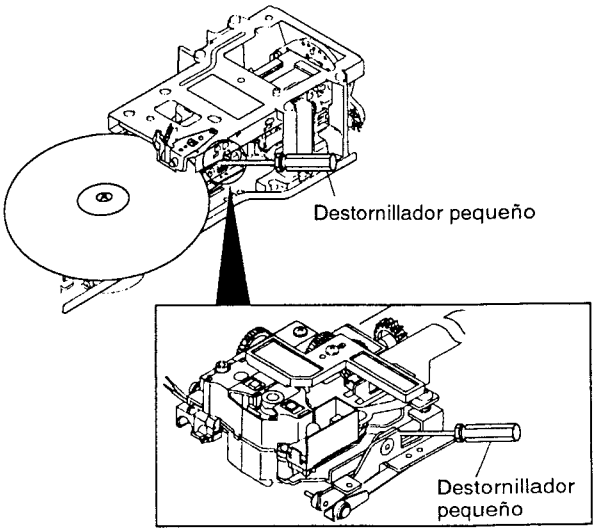
● Propósito: Para ajustar la retícula hasta que dos rayos de seguimiento para el servo de seguimiento se apunten en las posiciones de las pistas que se reproducen. Ajuste la tensión del boucle de servo de seguimiento a 0V.

● Cuando no se ajusta correctamente: Se saltan las pistas en la reproducción.

• Instrumentos y dispositivos de medida:	● Osciloscopio ● Destornillador pequeño ● Resisotr(10kΩ×2)
• Punto de medita:	● CN401-9(TRKG ERR), CN401-1(TRKG C) y CN401-2(TRKG A)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°6,500 ● Modo fijo
	● Modo de prueba(servo de seguimiento:Abierto)
• Posiciones para ajustarse:	● El conjunto de transporte debe ser en el estado de avance. ● Retícula

Diagrama de conexiones





3. Inserte el destornillador pequeño a través del agujero para el ajuste de la retícula para ajustarlo exaxtamente.

Procedimientos de ajuste

1. Conecte la entrada-X(CH-1) del osciloscopio a CN401-9 y conecte la entrada-Y(CH-2) a CN401-1 y 2.
2. Reproduzca el disco de prueba LD para buscar el fotograma n.°6,500 y abra el servo de seguimiento.
   Ajuste el osciloscopio en el modo de X-Y y observe las figuras de Lissajous de la señal de error de seguimiento y la señal del sumo de seguimiento.
3. Inserte el destornillador pequeño en el agujero para el ajuste, y ajuste exactamente la retícula hasta que la amplitud del eje-Y de las figuras de Lissajous se disminuya.(Fig. 1)
   Si la retícula se disminuye demasiado, y la posición óptima ya no se puede buscar, repita la sección "2. Ajuste aproximado de la retícula".
4. Seleccione la entrada-X(CH-1) del osciloscopio y compruebe que las amplitudes positiva y negativa de la señal de error de seguimiento son iguales.
   Si no están iguales, repita la sección "2. Ajuste del equilibrio del seguimiento".
5. Cierre el servo de seguimiento y compruebe que la visualización(imagen) en la pantalla de TV es normal.

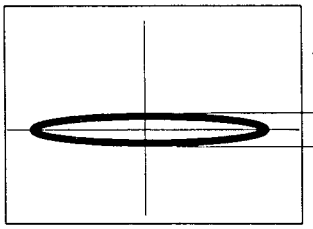


Fig. 1
Ajuste fino de la retícula

3. La amplitud del eje-Y de la figura de Lissajous se hace minima.

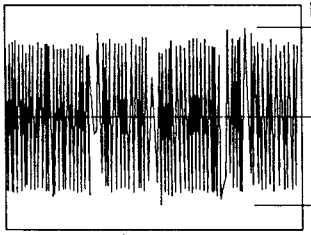


Fig. 2
Equilibrio del seguimiento

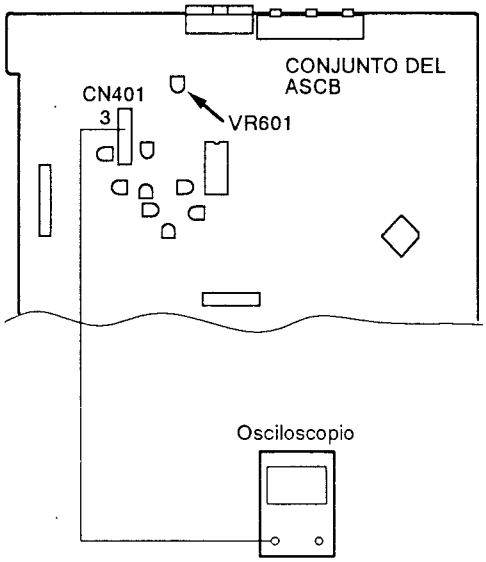
11. AJUSTE DE LA GANANCIA DE RF

● Propósito: Para ajustar la amplitud de la señal de RF al valor óptimo.

● Cuando no se ajusta correctamente: Reproducción empeorada se ocurre frecuentemente.

• Instrumentos y dispositivos de medida:	● Osciloscopio
• Punto de medita:	● CN401 - 3 (signal RF)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°15,000 ● Modo fijo ● Modo de prueba (servo de seguimiento:Cerrado) ● Servo de inclinación:Neutral ● El conjunto de transporte debe ser en el estado de avance.
• Posiciones para ajustarse:	● VR601 (RF LEVEL)

Diagrama de conexiones



Procedimientos de ajuste

1. Reproduzca el disco de prueba LD y busque el fotograma n.°15,000.
2. Conecte el osciloscopio a CN401 - 3 (señal de RF) y observe la señal de RF.
3. Ajuste VR601 hasta que la amplitud de la señal de RF sea 300mV ± 50mV. (Fig. 1)

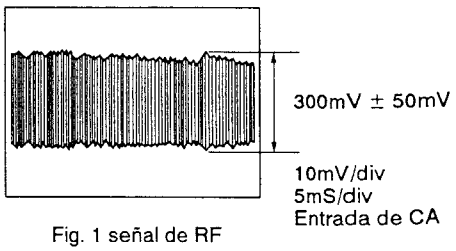


Fig. 1 señal de RF

12. AJUSTE DE LA GANANCIA DEL BUCLE DE SERVO DE FOCO

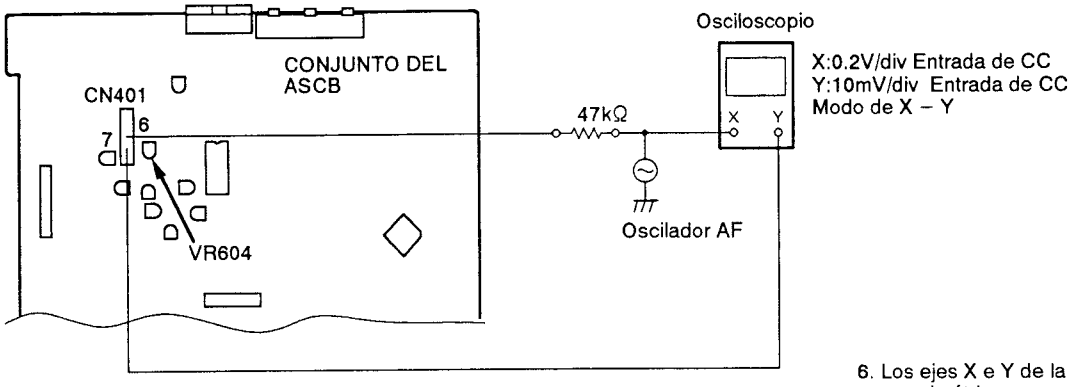
Ajuste Mecánicos

● Propósito: Para ajustar la ganancia del boucle de servo de foco al valor óptimo.

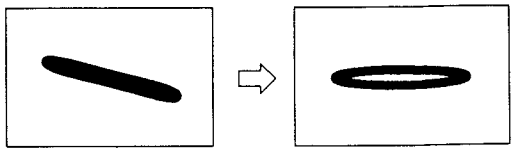
● Cuando no se ajusta correctamente: Reproducción se empeora.

• Instrumentos y dispositivos de medida:	● Osciloscopio ● Oscilador AF ● Resistor(47kΩ)
• Punto de medita:	● CN401-6(FOCS ERR) y CN401-7(FOCS IN)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°15,000 ● Modo fijo ● Modo de prueba(servo de seguimiento:Cerrado) ● Servo de la inclinación:Neutral
• Posiciones para ajustarse:	● El conjunto de transporte debe ser el estado de avance. ● VR604(FOCS GAIN)

Diagrama de conexiones



6. Los ejes X e Y de la figura de Lissajous son simétricos



Ajuste incompleto — Ajuste apropiado

Fig. 1

Procedimiento de ajuste

1. Conecte la entrada-X(CH-1) del osciloscopio a CN401-6 a través del resistor y del oscilador de AF, y conecte la entrada –Y(CH-2) a CN401-7, como se ve en el diagrama arriba.
2. Ajuste la salida de oscilador de AF a 1,7kHz/6Vp-p para GGV1007, de acuerdo con el disco de prueba usado.
3. Reproduzca el disco de prueba LD de 8 pulgadas y busque el fotograma n.°15,000.
4. Ajuste el oscilador en el modo de X-Y y observe la figura de Lissajous.
5. Ajuste VR604 para que los ejes Xe Y de la figura de Lissajous sean simétricos.(Fig. 1)

Nota : Si la salida del oscilador de AF no sobrepasa a 6Vp-p, reduzca el valor del resistor(47kΩ) en el diagrama arriba, para más fácil observación de la figura de Lissajous.(no menos de 33k Ω)

13. AJUSTE DE LA GANANCIA DEL BUCLE DE SERVO DE SEGUIMIENTO

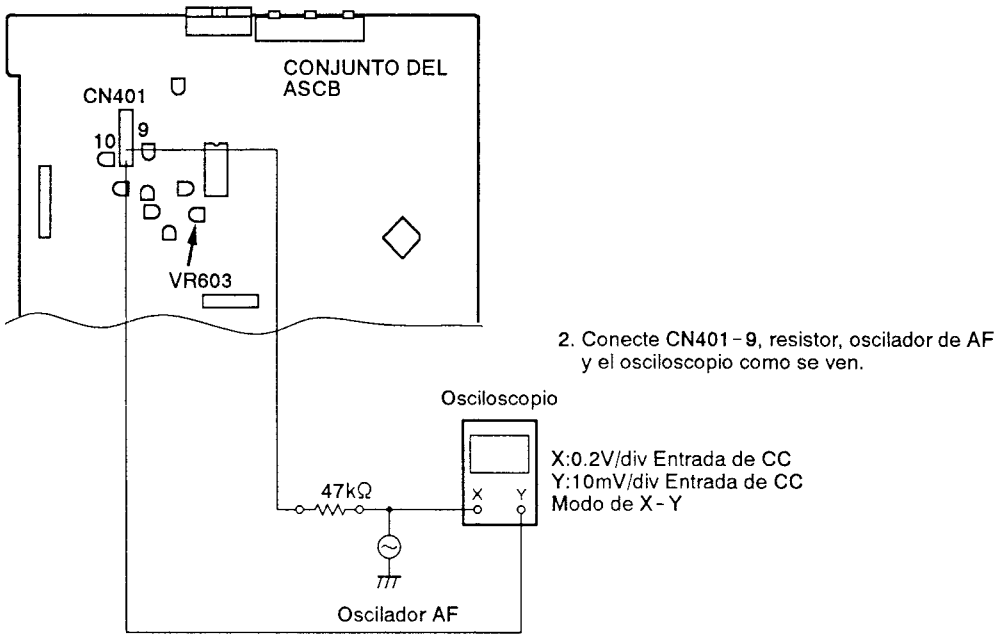
Ajustes Mecánicos

● Propósitot: Para ajustar la ganancia del bucle del servo de seguimiento al valor óptimo.

● Cuando no se ajusta correctamente: Reproducción se empeora.

• Instrumentos y dispositivos de medida:	● Osciloscopio ● Resistor(47kΩ) ● Oscilador AF
• Punto de medita:	● CN401-9(TRKG ERR), CN401-10(TRKG IN)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD 8 pulgadas GGV1007...n.°15,000 ● Modo fijo ● Servo de inclinación:Neutral ● Modo de prueba(servo de seguimiento:Cerrado) ● El conjunto de tranporte debe ser en el estado de avance.
• Posiciones para ajustarse:	● VR603

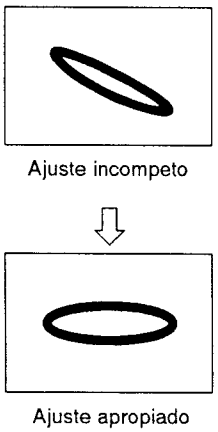
Diagrama de conexiones



Procedimiento de ajuste

1. Reproduzca el disco de prueba LD y busque el fotograma n.°15,000.
2. Conecte la entrada(CH-1) del osciloscopio a CN401-9 a través del resistor y del oscilador de AF, y conecte la entrada-Y(CH-2) a CN401-10, como se en ven el diagrama arriba.
3. Ajuste la salida del oscilador de AF a 3,0kHz/6Vp-p para GGV1007, de acuerdo con ven el disco de prueba usado.
4. Ajuste el osciloscopio en el modo de X-Y y observe la figura de Lissajous.
5. Ajuste VR603 para que los ejes X e Y de la figura de Lissajous sean simétricos.(Fig. 1)

Nota : Si la salida del oscilador de AF no sobrepasa 6Vp-p, reduzca el valor del resistor(47kΩ) en el diagrama arriba, para más fácil observación de la figura de Lissajous.
(no menos de 33kΩ)



Ajuste incompeto

Ajuste apropiado

5. Los ejes X e Y de la figura de Lissajous son simétricos.

Fig. 1

14. AJUSTE DEL CENTRADO PARA LA REPRODUCCIÓN DEL LADO B

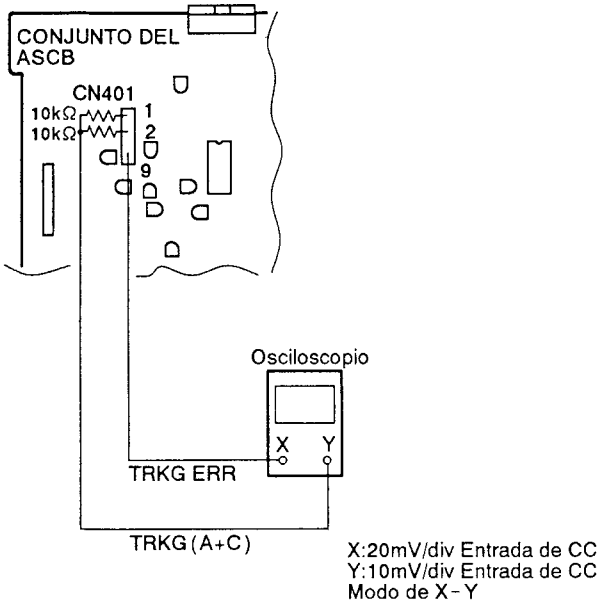
Ajustes Mecánicos

● Propósito: Para comprobar la posición al comienzo de la reproducción y para poner el centro del motor de eje sobre el paso del rayo lasérico cuando empezar la reproducción del lado B del disco.

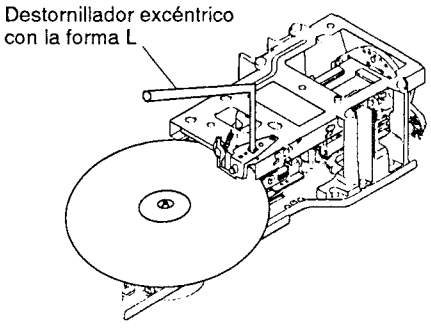
● Cuando no se ajusta correctamente: Se saltan las pistas, se tarda más tiempo en buscar o es imposible buscar, cuando se reproduce el lado B del disco.

• Instrumentos y dispositivos de medida:	● Destornillador excéntrico con la forma L(GGV-129) ● Osciloscopio ● Resistor(10kΩ)
• Punto de medita:	● CN401-9(TRKG ERR), CN401-1(TRKG C) y CN401-2(TRKG A)
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°100 ● Modo reproducción ● El conjunto de transporte debe ser en el estado de avance contrario. ● Modo de prueba(servo de seguimiento:Abisiciones/Cerrado)
• Posiciones para ajustarse:	● Agujero para el ajuste del centrado para el lado B

Diagrama de conexiones



4. Ajuste del centrado para la reproducción del lado B.



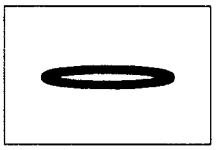


Fig. 1

4. Ajuste apropiado(X:máximo)

Procedimiento de ajuste

1. Revuelva el disco de prueba LD(cambie desde el lado A al lado B). Posición del comienzo de la reproducción debe ser dentro del fotograma n.°3,500.
2. Ajuste el osciloscopio en el modo de X-Y, conecte la entrada-X(CH-1) del osciloscopio a CN401-9(TRKG ERR) y conecte la entrada-Y(CH-2) a CN401-1 y 2(TRKG A+C)
3. Reproduzca el disco de prueba LD y busque el fotograma n.°100 y abra el servo de seguimiento.

Nota: Si el centro está tan excéntrico en el lado B del disco, que no se pueda buscar el lado, sbra el servo de seguimiento cuando el conjunto de transporte mueve hacia la posición del lado B y busca el fotograma n.° 100.

4. Mientras observando la figura de Lissajous del osciloscopio, inserte el destornillador exéntrico en el agujero para el ajuste del centrado para el lado B y ajústelo hasta que la amplitud del eje-X de la figura de Lissajous se disminuya(la posición sobre la pista). Después, haga girar el destornillador a la derecha hasta que la amplitud del eje-X de la figura sea máxima.(Fig. 1)

Nota: Cuando se realiza la sección "4. Ajuste de la inclinación del captor" en el estado de avance, realice las secciones "15. Ajuste del ángulo del sentido tangencial del captor para la reproducción del lado B" y "16. Ajuste fino del centrado para la reproducción del lado B".

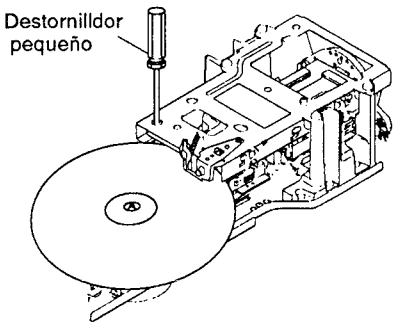
15. AJUSTE DEL ANGULO DEL SENTIDO TANGENCIAL DEL CAPTOR PARA LA REPRODUCCIÓN DEL LADO B

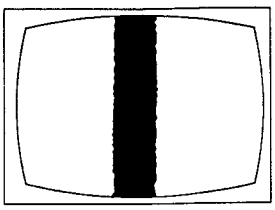
● Propósito: Para ajustar la diafonía hasta que sea mínima en el ángulo del sentido tangencial del conjunto de captor cuando se reproduce el lado B del disco.

● Cuando no se ajusta correctamente: Diafonia está significante.

• Instrumentos y dispositivos de medida:	● Monitor de TV ● Destornilldor pequeño de Phillips
• Punto de medita:	● Pantalla de monitor
• Disco de prueba y el modo de reproductor:	● Disco de prueba LD de 8 pulgadas GGV1007...n.°475 ● Modo fijo ● El conjunto de transporte debe ser en el estado de avance contrario.
• Posiciones para ajustarse:	● Tornillo para el ajuste del ángulo del sentido

Diagrama de conexiones





2. Diafonía mínima

Procedimiento de ajuste

1. Rèproduzca el disco de prueba LD y busque el fotograma n.°475.
2. Compruebe que se aparece la diafonía en la pantalla del monitor de TV, y ajuste el tornillo para el ajuste del ángulo del sentido tangencial del captor hasta que la diafonía.
3. Después de las etapas 1 y 2, realice otra vez la sección "14. Ajuste del centrado para la reproducción del lado B".

Nota: Cuando el ángulo del sentido tangencial del captor para la reproducción del lado B se varia por este ajuste, se cambia suavemente el centro del disco para el lado B. Como una contramedita, realice el ajuste del centrado otra vez.

16. AJUSTE FINO DEL CENTRADO PARA LA REPRODUCCIÓN DEL LADO B

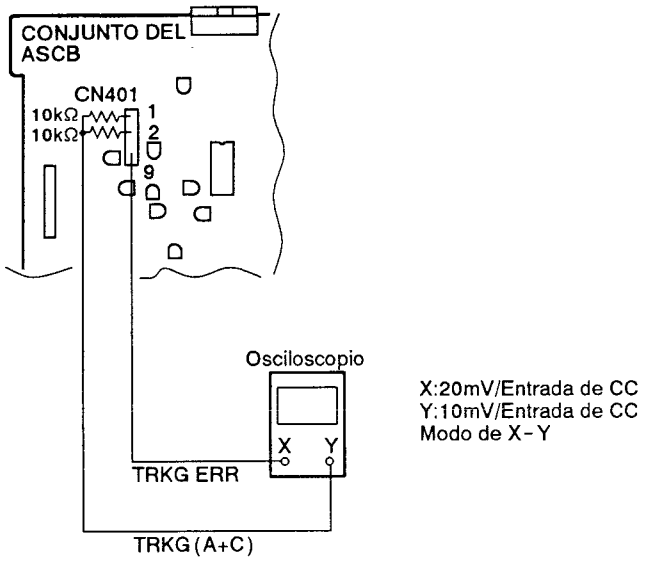
Ajustes Mecánicos

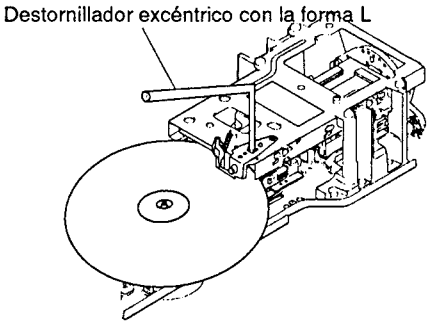
● **Propósito:** Para ajustar el centro del motor de eje sobre la pista del rayo lasérico cuando se reproduce el lado B del disco.

● **Cuando no se ajusta correctamete:** Se saltan las pistas cuando se reproduce el lado B del disco.

• Instrumentos y dispositivos de medida: • Punto de medita: • Disco de prueba y el modo de reproductor: • Posiciones para ajustarse:	● Osciloscopio ● Destornillador excéntrico con la forma L(GGV-129) ● Resistor (10kΩ × 2) ● CN401-9(TRKG ERR), CN401-1(TRKG C) y CN401-2(TRKG A) ● Disco de prueba LD de 8 pulgadas GGV1007...n.°100 ● Modo de prueba(servo de seguimiento:Abierto) ● Modo de reproducción ● El conjunto de transporte debe ser en el estado contrario. ● Agujero para el ajuste del centrado para el lado B

Diagrama de conexiones





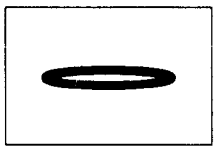


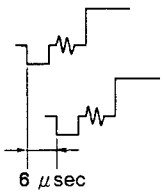
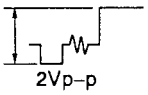
Fig. 1

4. El eje-X de la figura de Lissajous está máximo.

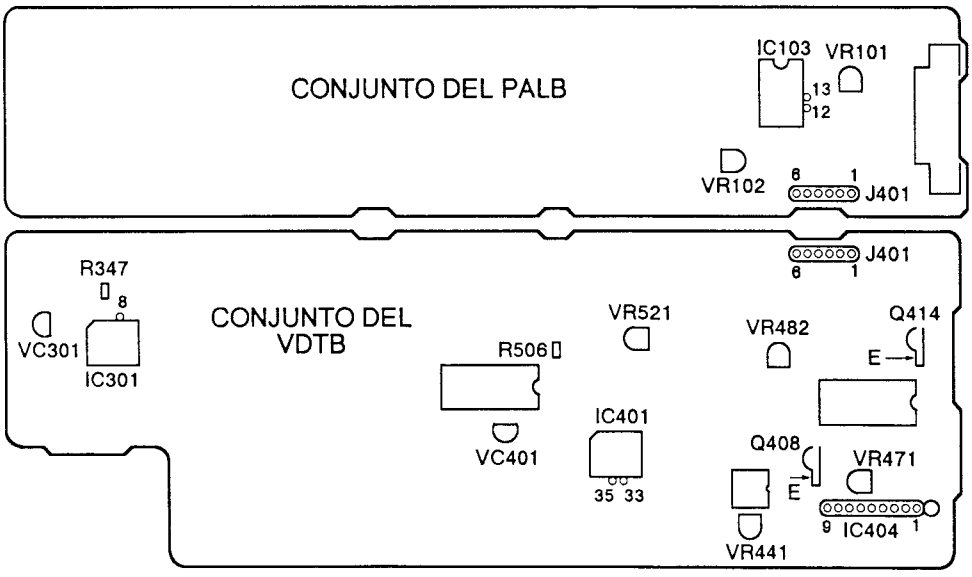
Procedimiento de ajuste

1. Ajuste el osciloscopio en el modo de X-Y, y conecte la entrada-X(CH-1) del osciloscopio a CN401-1 y 2(TRKG A+C).
2. Reproduzca el disco de prueba LD y busque el fotograma n.°100.
3. Abra el servo de seguimiento.
4. Mientras observando la figura de Lissajous del osciloscopio, inserte el destornillador excéntrico en el agujero para el ajuste para el lado B y ajustélo hasta que la amplitud del eje-X de la figura de Lissajous sea máxima.(Fig. 1)
5. Desconecte la alimentación.
6. Los tornillos para la fijación son como siguen;
   Tornillo para la retícula
   Tornillo para el ajuste del centrado del motor de eje
   Tornillo para el ajuste del ángulo del sentido tangencial del captor
   Agujero para el ajuste del centrado para el lado B
   Tornillo del sensor de la inclinación
   Placa del mango(superior)

7.4.4 AJUSTES ELECTRICOS

	Ajuste	Punto de Ajuste	Especificaciones de Ajuste	Inspección Estándar	Notas
	Conjunto del VDTB				
1	Ajuste del reloj del generador sincrónico	VC401	Ajuste VC401 a 17,734475MHz en el lado OPEN de R506.	17,734475MHz ± 100Hz	
2	Ajuste de reloj REF	VC301	Ajuste a 3,5546875MHz al alfiler 8 (R347) de IC301.O, ajuste para que 1H del video PB (reproducción) sea 10 segundos más largos que 1H de señal de referencia de video.	3,5546875MHz ± 25Hz 15,6250kHz ± 0,1Hz	
3	Ajuste de frecuencia central de VCO	VR471	 Ajuste VR471 para que el retardo de tiempo entre entrada de video CCD (Q408 emitidor) y la salida de video CCD (Q414 emitidor) sea 70 μsec (1H + 6 μsec). Para este ajuste, conecte el alfiler de IC404 a GND.	70 μsec ± 1,4 μsec	
4	Ajuste del nivel de video	VR482	 Ajuste del nivel de video blanco de 100% a 2Vp-p en VIDEO OUT (J401, alfiler 6).	2Vp-p ± 5%	
5	Ajuste del nivel de video de retardo 1H	VR441	Ajuste VR441 para que el nivel de video de retardo de 1H en el alfiler 33 de IC401 sea mismo que el nivel de video en el alfiler 35. Video de línea principal es de ± 3%.	Video de línea principal ± 3%	
6	Ajuste del nivel de VPS ERR	VR521	Mientras observando la pantalla majenta en la esfera de vector, reduzca la fluctuaión en VIDEO OUT (J401, alfiler 6).		
	Conjunto del PALB				
7	Ajuste del nivel de video MOD	VR102	Ajuste VR102 para que el nivel de luz de video MOD al alfiler 13 de IC103 sea mismo que el nivel a través de video en el alfiler 12.	± 3%	
8	Ajuste del nivel SC de retardo de 1H	VR101	Mientras observando las barras de color en el modo fijo en la esfera de vector, reduzca la variación de ganancia en VIDEO OUT (J401, alfiler 6).		

- **PUNTO DE AJUSTE**



8. FOR WB TYPE

NOTES:

- *Part without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by" ◉ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

CONTRAST OF MISCELLANEOUS PARTS

The CLD-2600/WB type and the CLD-2600/WEZ type have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		WEZ type	WB type	
⚠	AC power cord	VDG1028	VDG1029	
	Packing case	VHG1161	VHG1162	For packing
	Operating instructions (English/French/German/Italian)	VRE1007	• • • • •	
	Operating instructions (Dutch/Swedish/Spanish/Portuguese)	VRF1012	• • • • •	
	Operating instructions (English)	• • • • •	VRB1057	

9. BLOCK DIAGRAMS

9.1 OVERALL BLOCK DIAGRAM

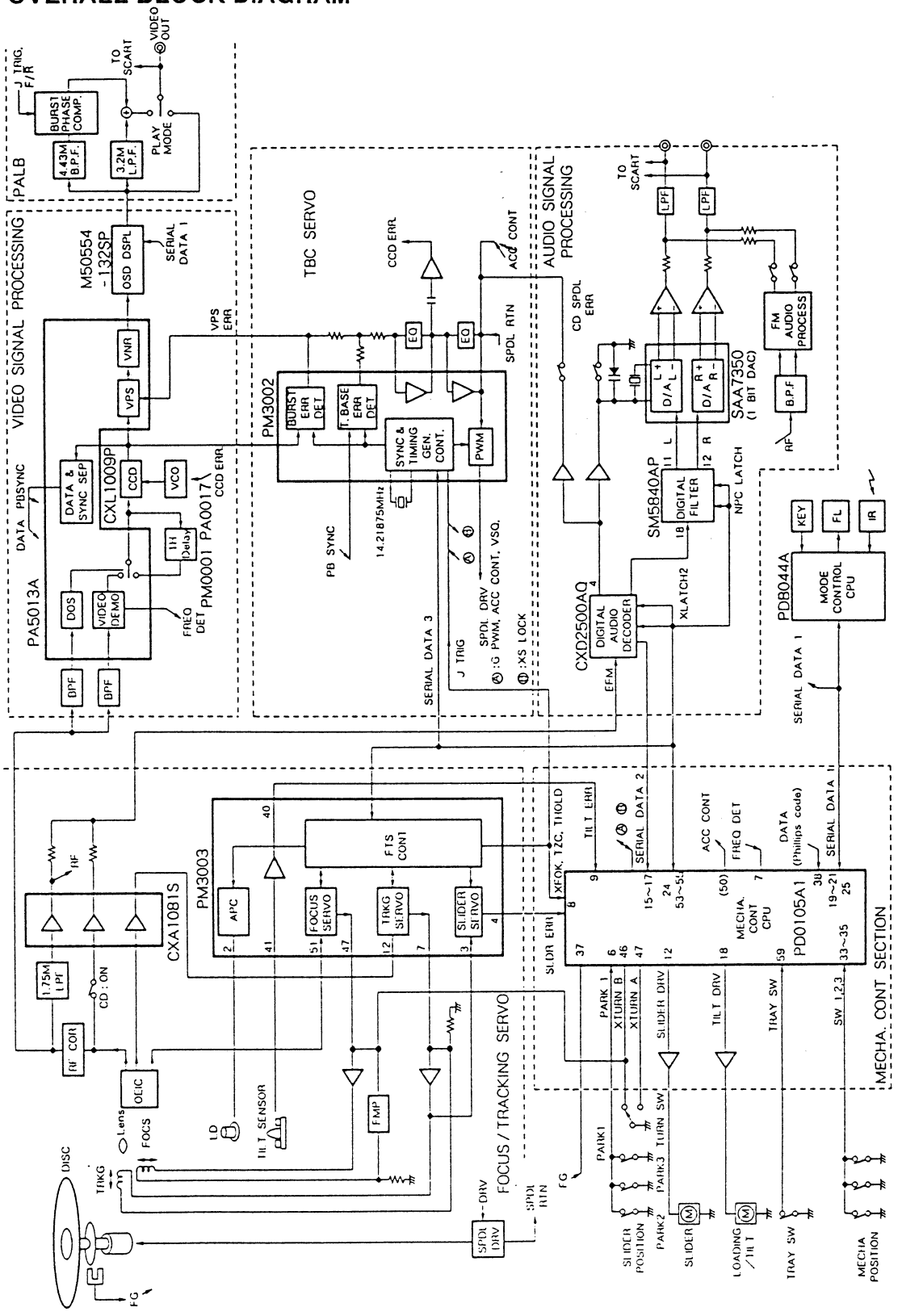


Fig. 9-1 Overall block diagram

9.2 VIDEO SECTION

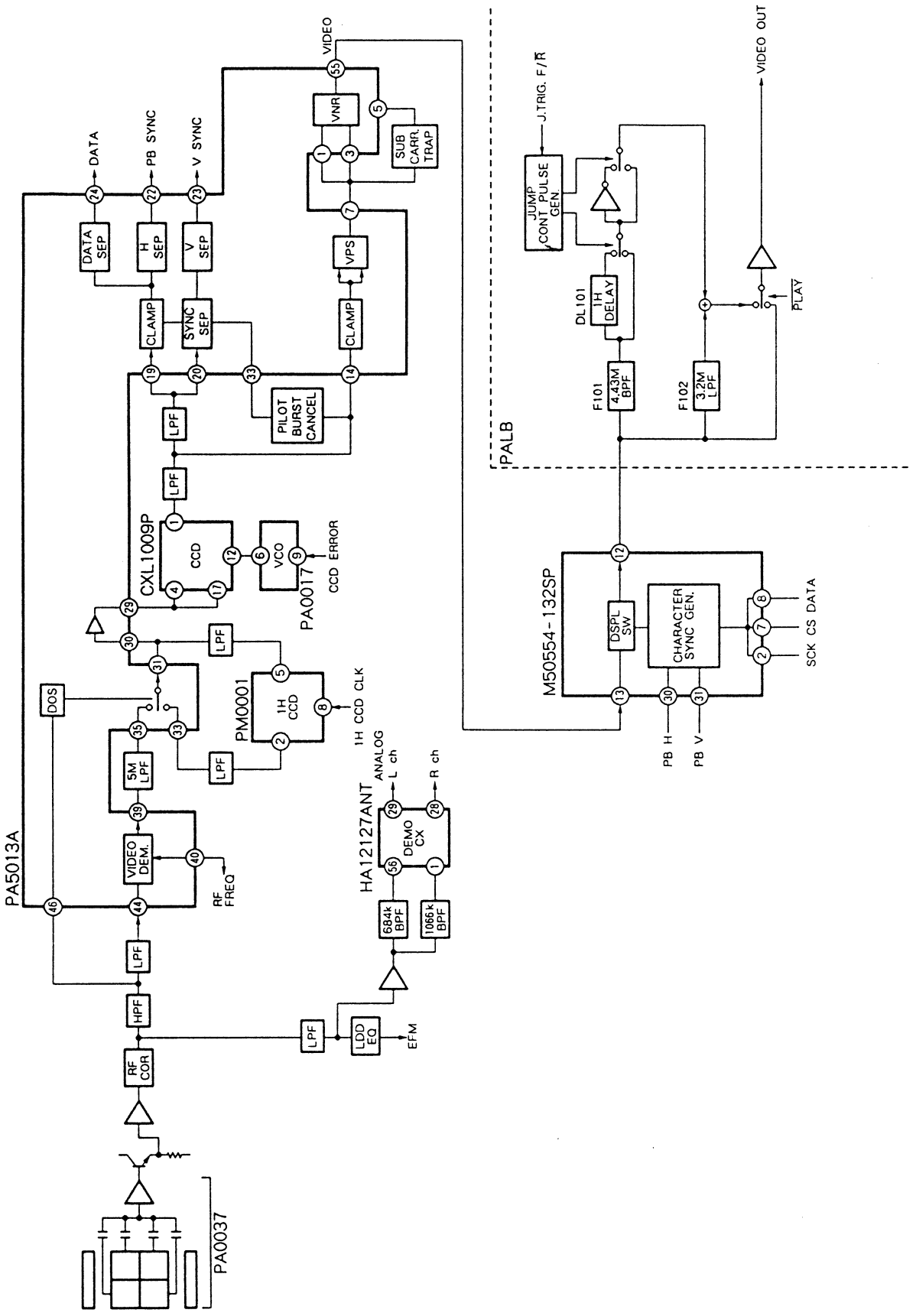


Fig. 9-2 Block diagram of the video section

9.3 TBC SECTION

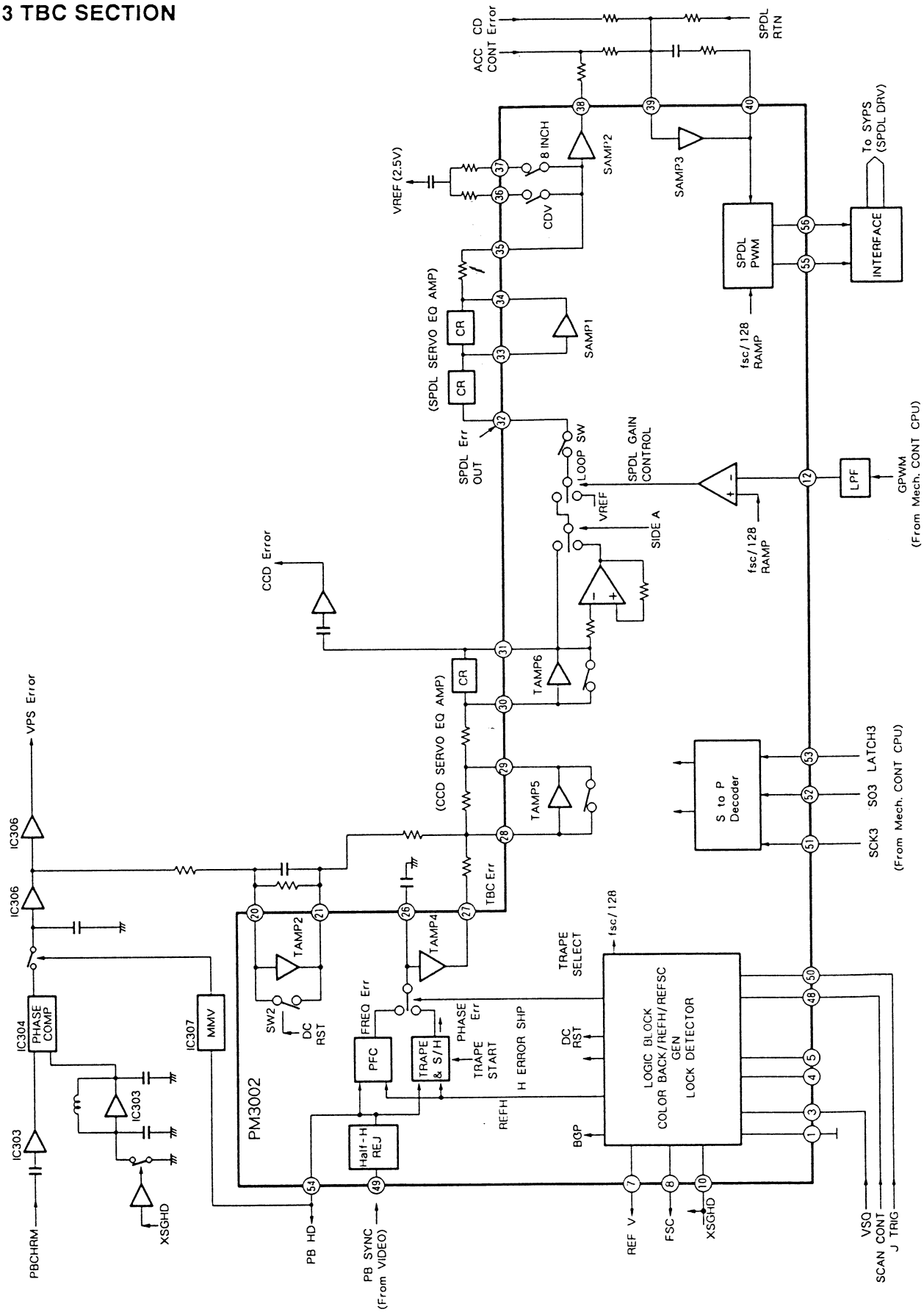


Fig. 9-3 Block diagram of the TBC section

9.4 FTS SECTION

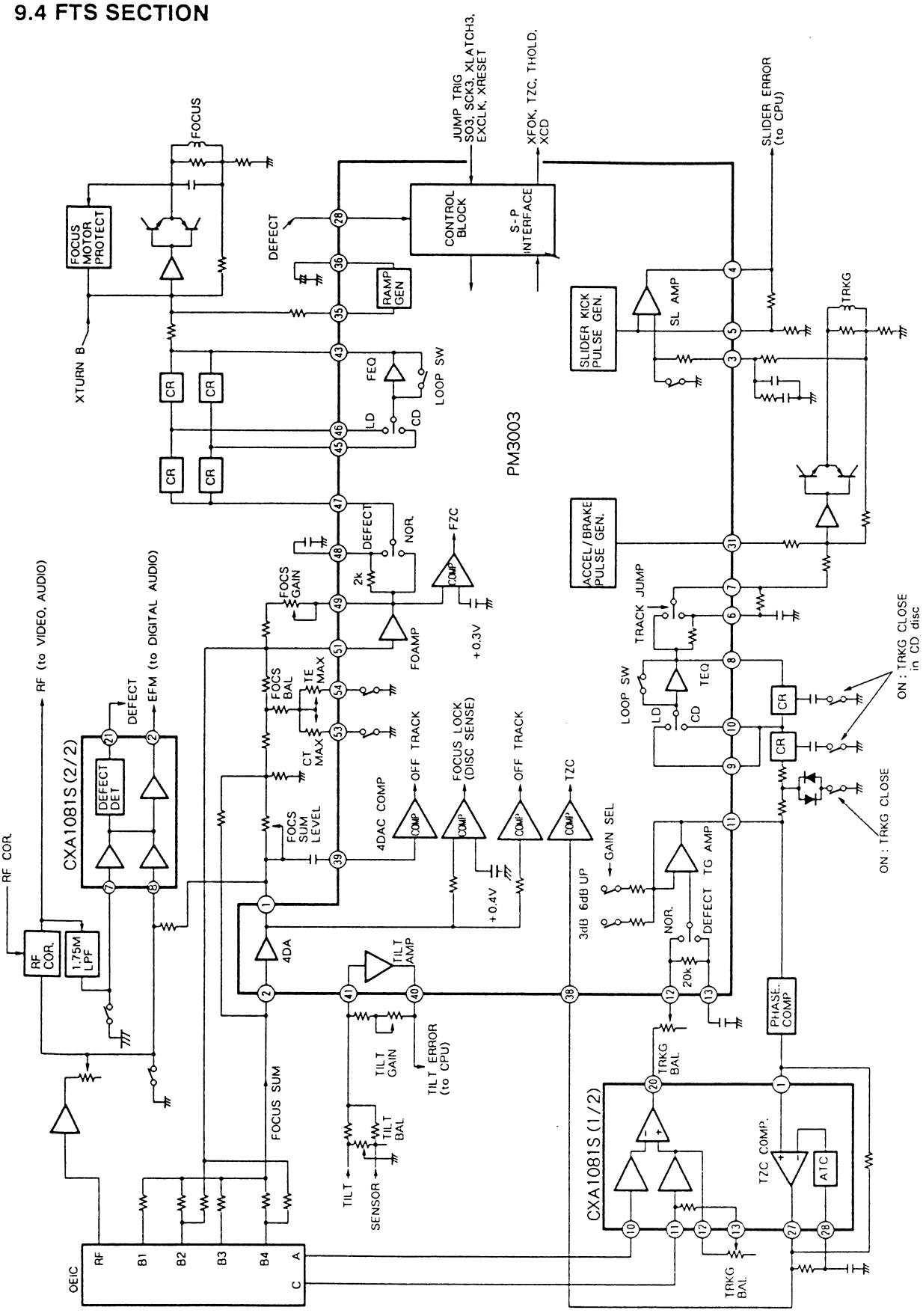
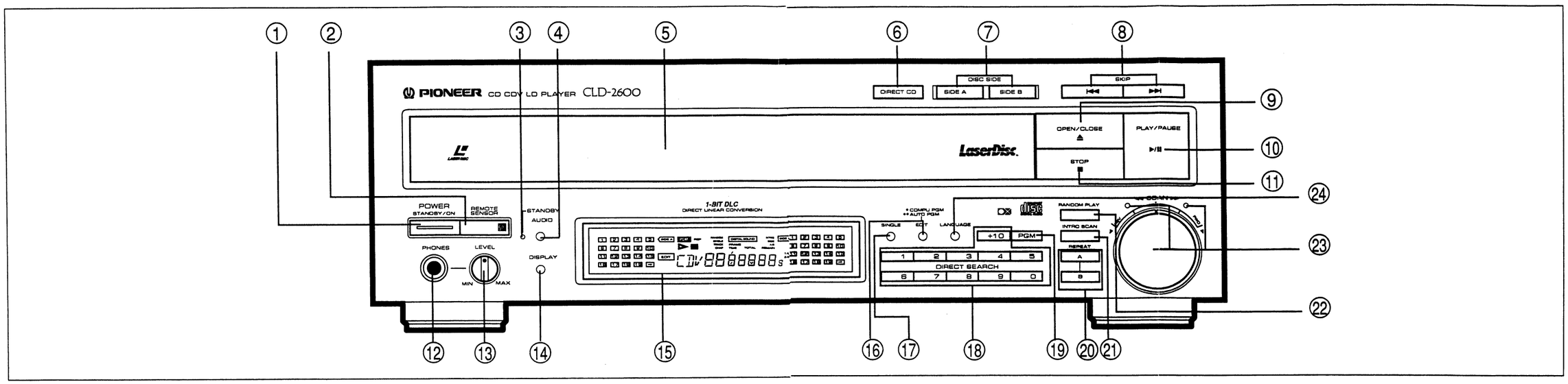


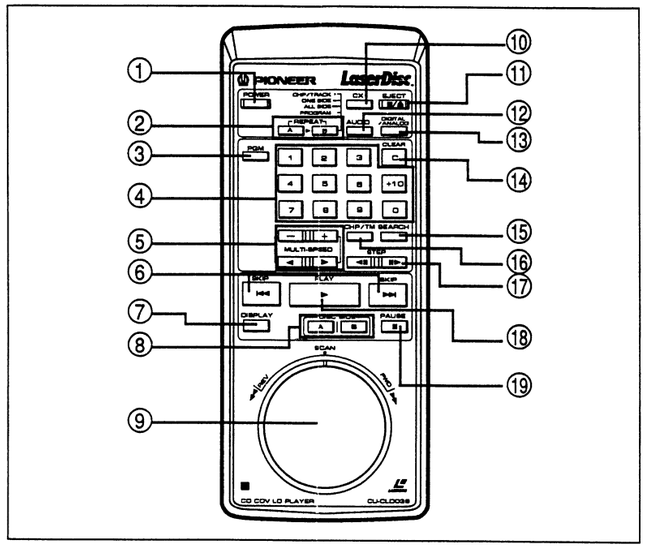
Fig. 9-4 Block diagram of the FTS section

10. PANEL FACILITIES



① **POWER STANDBY/ON switch**
Press to turn the power on and off.
② **REMOTE SENSOR**
③ **STANDBY indicator**
④ **AUDIO button**
⑤ **Door/Disc table**
⑥ **DIRECT CD button**
⑦ **DISC SIDE A/B button**
⑧ **SKIP buttons**
⑨ **OPEN/CLOSE button**
⑩ **PLAY/PAUSE button**
⑪ **STOP button**
⑫ **PHONES jack**
⑬ **PHONES LEVEL control**
Turn this control in the "MAX" direction to increase the output level from the PHONES jack. Turn this control in the "MIN" direction to decrease the output level from the PHONES jack.
⑭ **DISPLAY button**
⑮ **Display window**
⑯ **EDIT button (COMPU PGM/AUTO PGM)**
⑰ **SINGLE button**
⑱ **DIRECT SEARCH/Digit buttons**
⑲ **PGM button**
⑳ **REPEAT A/B buttons**
㉑ **INTRO SCAN button**
㉒ **RANDOM PLAY button**
㉓ **SCAN control and indicators**
㉔ **LANGUAGE button**

Remote control buttons with the same names or marks as buttons on the front panel of the player control the same operations as the corresponding front panel buttons.



① **POWER button**
Press to turn the power on and off.
② **REPEAT A/B buttons**
③ **PGM button**
④ **Direct search/Digit buttons**
⑤ **MULTI-SPEED buttons**
⑥ **SKIP buttons**
⑦ **DISPLAY button**
⑧ **DISC SIDE A/B buttons**
⑨ **SCAN control**
⑩ **CX button**
⑪ **EJECT button**
⑫ **AUDIO button**
⑬ **DIGITAL/ANALOG button**
⑭ **CLEAR button**
Used to clear the repeat mode, program mode, random play mode or hi-lite scan/intro scan mode. This button is also for use in correcting input digits.
⑮ **SEARCH button**
⑯ **CHP/TM button**
⑰ **STEP buttons**
⑱ **PLAY button**
⑲ **PAUSE button**

11. SPECIFICATIONS

1. General

System ..... LaserVision Disc system and Compact Disc digital audio system
Laser ..... Semiconductor laser wavelength 780 nm
Power requirements ..... AC 220 ~ 240 V, 50/60 Hz
Power consumption ..... 42 W
Weight ..... 8.5 kg
Dimensions ..... 420 (W) x 438 (D) x 135 (H) mm
16-9/16 (W) x 17-1/4 (D) x 5-5/16 (H) in
Operating temperature ..... +5°C ~ +35°C (41°F - 95°F)
Operating humidity ..... 5% ~ 90%
(There should be no condensation of moisture.)

2. Disc

LaserVision Discs

*Maximum playing times
30 cm active play disc ..... 72 min/both sides
30 cm long play disc ..... 2 hours/both sides
20 cm active play disc ..... 28 min/both sides
14 min/one side
20 cm long play disc ..... 40 min/both sides
20 min/one side
Spindle motor speed
Active play disc ..... 1,500 rpm
Long play disc ..... 1,500 rpm (inner circumference) to 570 rpm (outer circumference)
(For a 30 cm disc)

Compact Discs

DISC ..... Diameter: 12 cm, 8 cm, Thickness: 1.2 mm
Rotation direction (pickup side) ..... Counterclockwise
Liner speed ..... 1.2 ~ 1.4m/sec
*Maximum playing time
74 min. 12 cm discs
20 min. 8 cm discs
(For stereo playback)

Compact Discs with Video

Disc ..... Diameter: 12 cm, Thickness: 1.2 mm
Rotation direction (pickup side) ..... Counterclockwise
Linear speed ..... Audio portion: 1.2 ~ 1.4m/sec
Video portion: 11 ~ 12m/sec
*Maximum playing time ..... Video portion: 5 min. (CLV)
Audio portion: 20 min. (Digital)

** Actual playback time differs for each disc.*

3. Video characteristics

Format ..... PAL specifications
Video output
Level ..... 1 Vp-p nominal, sync. negative, terminated
Impedance ..... 75Ω unbalanced
Jack ..... RCA jack

4. Audio characteristics

Output level
During analog audio output ..... 200 mVrms (1 kHz, 40%)
During digital audio output ..... 200 mVrms (1 kHz, –20 dB)
Jacks ..... Both RCA jacks
Number of channels 2

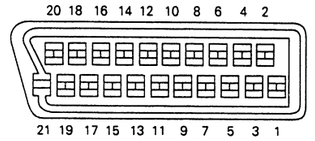
Digital Audio Characteristics

Frequency response	4 Hz - 20 kHz (±0.5 dB) (EIAJ)
SN ratio	106 dB (EIAJ)
Dynamic range	99 dB (EIAJ)
Channel separation	98 dB (EIAJ)
Total harmonic distortion	0.002% (EIAJ)
Wow and flutter	Limit of measurement (EIAJ)

5. Other Terminals

Control input/output ..... Both miniature jacks
CD-DECK synchro ..... Miniature jack
Optical digital output ..... Optical digital jack
AV connector output ..... 21-pin connector
This connector provides the video and audio signals for connection to a colour video TV monitor (or TV set) which has a "AV CONNECTOR" terminal.

PIN assignment



PIN no.
1 Audio 2/R out
3 Audio 1/L out
4 GND
8 Status
17 GND
19 Video out
21 GND

6. Accessories

Remote control unit (CU-CLD039) 1
Size "AAA" (IEC R03) dry cell batteries 2
Euroconnector cable 1
Audio cord 1
Operating instructions 1
Warranty card 1

7. Functions

Remote control unit operations (CU-CLD039)

	Function	Active play Disc (CAV)	Long play Disc (CLV)	Compact Disc with Video	Compact Disc
Basic Functions	Two-side play	YES	YES	NO	NO
	Single-side play	YES	YES	YES	YES
	Pause	YES	YES	YES	YES
	Stop	YES	YES	YES	YES
Search	Fast forward (forward and reverse)	YES	YES	YES	YES
	Chapter/Track skip	YES	YES	YES	YES
	Direct chapter/Track number search	YES	YES	YES	YES
	Frame number search	YES	NO	NO	NO
	Time number search	NO	YES	YES	YES
	Absolute time search	NO	NO	NO	YES
Program	Chapter/Track program play	YES	YES	YES	YES
	Program correction	YES	YES	YES	YES
Repeat	Repeat between 2 points	YES	YES	YES	YES
	Memory repeat	YES	YES	YES	YES
	Chapter/Track repeat	YES	YES	YES	YES
	One-side repeat	YES	YES	YES	YES
	Two-side repeat	YES	YES	NO	NO
	Program repeat	YES	YES	YES	YES
	Random repeat	YES*1	YES*1	YES	YES
	Program random repeat	YES	YES	YES	YES
Trick play	Still/Step	YES	NO	NO	NO
	Multi-speed (Forward/reverse 9-level variable)	YES	NO	NO	NO
Time display	Elapsed time display	NO	YES	YES	YES
	Absolute time display	YES*1	NO	NO	YES
	Remaining track time display	NO	NO	YES	YES
	Remaining total time display	YES*1	YES*1	YES	YES
	Total number of selections, total time display	YES*1	YES*1	YES	YES
Others	Single play	YES	YES	YES	YES
	CX system ON/OFF	YES*2	YES*2	NO	NO
	Audio channel selection (Stereo, 1/L, 2/R)	YES	YES	YES	YES

*1 Only discs with TOC

*2 Valid for analog sound playing a disc with the CX mark.

NOTE:

The specifications and design of this product are subject to change without notice, due to improvement.

PLAYER FUNCTIONS

- Display, Visual Calendar Display
- Intro Scan, Direct CD, Single Play, Random Playback, Program Random Playback and Compu Program/Auto Program Edit
- Digital Sound for LaserVision Discs
- Last Memory

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